DOCUMENT RESUME

ED 253 109 FL 014 857

TITLE	French Immersion Programmes in Manitoba: An Evaluation of Grades 6 and 9. Final Report.
INSTITUTION	Centre for Research and Consultation, Winnipeg (Manitoba).
SPONS AGENCY	Manitoba Dept. of Education, Winnipeg. Bureau of French Education.
PUB DATE	Nov 83
NOTE	124p.; Product of the French Immersion Research Project. For a related document, see ED 219 950.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*Academic Achievement; Administrator Characteristics; Educational Research; Elementary Secondary Education; English; Foreign Countries; *French; Grade 6; Grade 9; *Immersion Programs; Language Proficiency; Mathematics; *Program Evaluation; Research Projects; *Second Language Instruction; *Student Attitudes; Student Characteristics; Teacher Characteristics
IDENTIFIERS	Manitoba

ABSTRACT

The evaluation of Manitoba's French immersion programs for grades 6 and 9, undertaken as part of a policy formation process, compares students' achievement in English language skills and mathematics to the national norm and within immersion groups in those grades. Achievement in French and French language proficiency are also compared within immersion groups and in comparison to a sample of native French-speaking students. Different types of immersion programs--early, intermediate, and late, total and partial--offered in both immersion and dual-track settings are considered. Responses of the students, their parents, teachers, and principals to questionnaires about the Manitoba programs are discussed. It was found that performance of French immersion students was as good as or better than national norms in English and mathematics, and French immersion programs have no negative effect on achievement in those subjects. It was found that although French immersion groups obtained lower results in French language proficiency than students whose native language is French, the early total immersion program in an immersion setting produces the best results. Intermediate and late total immersion programs also yielded positive results. It is suggested that the program type and setting influence French language development, with students in an immersion setting and in a total immersion program obtaining higher scores than those in an English setting or in a partial immersion program. Parents generally expressed satisfaction with the program and setting, and teachers and principals expressed a belief that the immersion setting was more conducive to achieving the French immersion programs' objectives. (Author/MSE)

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FRENCH IMMERSION PROGRAMMES IN MANITOBA: AN EVALUATION OF GRADES 6 AND 9

FINAL REPORT

November 1983

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BUREAU DE L'EDUCATION FRANÇAISE

THE FRENCH IMMERSION RESEARCH PROJECT

MANITOBA

1983

This Research Report was undertaken by the Department of Education in cooperation with participating school divisions during the 1982/83 school year. The study was directed by the Bureau de l'Education française.

Authorized for Release
by the

Bureau de l'Education française
Department of Education

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MANITOBA
MINISTERE DE L'EDUCATION

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PREFACE

Those responsible for the introduction of programs of study at the divisional level are frequently faced with a confusing array of information about possible choices and, often, that information is incomplete, conflicting and unintelligible to all but the sophisticated researcher.

The Bureau de l'Education française of the Department of Education, in cooperation with school divisions, contracted with a research group for a study of the French Immersion programs in Manitoba. The researchers have completed an extensive analysis of Manitoba programs and this study, along with the study of Immersion programs in Manitoba released in 1981, can be considered as part of the ongoing evaluation of French Immersion programs in Manitoba. The Bureau de l'Education française is making available, to its various educational clients, a summary document of the research project. This document is available in both French and English.

The Bureau de l'Education française would like to express particular appreciation to the cooperating divisions and their representatives who provided guidance and support during the project. A special thank you is also extended to all other individuals involved in the project.

Guy L. Roy,
Assistant Deputy Minister

THE CONCLUSIONS AND OPINIONS IN THIS REPORT ARE THOSE OF THE PRINCIPAL INVESTIGATOR AND DO NOT NECESSARILY REFLECT THE VIEWS OR POLICIES OF THE DEPARTMENT OF EDUCATION.

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ACKNOWLEDGEMENTS

This report presents the results of a research project conducted during the 1982-83 school year on French immersion programmes in Manitoba.

We wish to thank the members of the Advisory Committee of School Division and Department of Education officials for their participation. The authors gratefully acknowledge the contribution of the School Division officials who assisted in the collection of the data presented in this report, the contact persons who coordinated the data collection in each school division, the test and questionnaire administrators, the parents, the principals and teachers. Finally, we wish to express our special thanks to the students who participated in this project.

ABSTRACT

French Immersion Programmes in Manitoba: An Evaluation of Grades 6 and 9

During the past decade, French immersion programmes have become increasingly popular in Manitoba as elsewhere. To accommodate the growing demand for the teaching of French immersion programmes, policy decisions are required by school divisions and the Department of Education. In order to assist in the formulation of appropriate policies, the school divisions and the Department have determined that it is essential to evaluate the existing programmes in the Province.

In this study, achievement in English language skills and in mathematics is compared to the national norm and within immersion groups in grades 6 and 9. Achievement in French and French language proficiency are also compared within immersion groups and to a sample of students whose mother tongue is French. Different types of programmes (early, intermediate and late, total and partial) offered in different settings (immersion and dual track) are considered in the study. The students, their parents, teachers and principals answered questionnaires to provide additional information on French immersion programmes in Manitoba.

The study indicates that French immersion students perform as well as, or better than, the national norms in English and mathematics. French immersion programmes have no negative effects on achievement in those

subjects. Although French immersion groups obtained lower results in French language proficiency than students whose mother tongue is French, the early total immersion programme in an immersion setting produces the best results. Intermediate and late total immersion programmes also yield positive results. The type of programme and the setting influence French language development: students in an immersion setting and in a total immersion programme obtain higher scores than those in an English setting or in a partial immersion programme.

While parents are generally satisfied with the programme and setting, teachers and principals believe that the immersion setting is more conducive to achieving the French immersion programmes' objectives.

I - INTRODUCTION

A variety of French immersion programmes has been introduced in Manitoba during the past decade. While they vary according to their type (early, intermediate or late, total or partial) and their setting (immersion schools, immersion centres in English or French schools, i.e., dual or triple track settings), they are generally modelled on existing programmes in Ontario and Québec.

French immersion programmes have become increasingly popular in Manitoba as elsewhere. To accommodate the increasing demand for the teaching of French as a second language, policy decisions are required by the school divisions offering these programmes and by the Department of Education. In order to formulate appropriate policies, the divisions and the Department have determined that it is essential to evaluate the existing programmes in the province.

In 1980-1981, the Department of Education, in cooperation with participating school divisions, undertook an evaluation of existing French immersion programmes in Manitoba. (1) Results were in agreement with those of studies in Québec and Ontario. The evaluation indicated that French immersion students perform as well as, or better than, the national norms in English and mathematics. French immersion programmes have no negative effects on achievement in those subjects. In French language achievement and proficiency, the early total immersion

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1. CERECO Inc., French Immersion Programmes in Manitoba: An Evaluation, April, 1981.

programme in an immersion setting produces the best results. The type of programme and the setting influence French language development: students in an immersion setting and in a total immersion programme achieve higher scores than those in an English setting or in a partial immersion programme.

This report presents the results of the second evaluation of French immersion programmes in Manitoba. The data were collected in April, May and June 1983 in schools offering French immersion programmes at the grade 6 and 9 levels.

The second chapter presents the major objectives and the limitations of the study. Chapter III describes the groups involved in the research project: the target and comparative student populations, the parents, the teachers and the principals. A discussion of tests and questionnaires follows, including the identification of standardized tests and the method used in the construction, pretest and scoring of the other measurement instruments. The schedule and procedures used to collect the data complete this chapter.

The students' results on the academic achievement tests and on the French proficiency test are presented in Chapter IV. The responses obtained on the students' and parents' questionnaires follow. An analysis of the teachers' and principals' questionnaires completes this chapter.

The final chapter summarizes the results of the study and identifies some of its implications.

II - RESEARCH OBJECTIVES AND LIMITATIONS

The major objectives of this study include the evaluation of achievement in English and mathematics; the results of French immersion students are compared to Canadian norms. The second objective is the evaluation of French language proficiency; the results are compared to those of French-speaking students in Français schools in Manitoba. French language proficiency results are also compared to determine differences between the French immersion programmes.

The research population consists of all students at the end of grades 6 and 9. They are enrolled in a variety of French immersion programmes (total or partial; early, intermediate or late) in different settings (immersion or dual track).

For the purposes of this research, the following definitions apply:

Total immersion:	programme with instruction in French ranging from 72% to 77% of the total instruction time;
Partial immersion:	programme with instruction in French ranging from 50% to 57% of the total instruction time;
Early immersion:	programme in which students begin French immersion in kindergarten or grade 1;
Intermediate immersion:	programme in which students begin French immersion in grade 4 (late entry immersion, grade 4);

Late immersion: programme in which students begin French immersion in grade 7 (late entry immersion, grade 7);

Immersion setting: school offering the French immersion programme only or the French immersion and regular English programmes. In the latter case, the French immersion programme is located in one section of the school building with different administrators, teachers and recreation time;

Dual track setting: school offering both the French immersion and the regular English programmes with one administration (English) responsible for both programmes.

The general question which summarizes the research objectives is: which immersion programme offered in which setting produces the best results in English language development and other subjects, and in French language proficiency?

In order to explain various differences observed between groups, data gathered from pupils, parents, teachers and principals are considered. These data, which could be termed "soft", include findings on attitudes, expectations and experiences. For comparisons within French immersion groups, two covariates are used in the analysis of covariance in the achievement or French language proficiency results: intelligence quotient and socio-economic status.

The major limitation of this research is the unequal number of students in each group and the unequal number of classes within each group.

The number of students in each type of programme and setting varies widely. Great care was taken to correct for unequal "n"s in cells by using statistical procedures. However, when reading this report, it should be remembered that some groups have very small numbers of students and that, in some cases, all students are from one class.

While the total Manitoban immersion population at the two grade levels was originally to be considered, some schools chose not to participate and others did not participate fully in the testing programme. For example, the grade 9 late total immersion group (grade 7 entry) is not included due to a local decision not to participate in this study. The inclusion of this group would have given more insight regarding the development of immersion programmes at the secondary level. Its exclusion is a research limitation which is reflected in the educational implications derived from this study.

Secondly, the nature of the selection process for the immersion programme could influence the composition of the groups. Late entry students (grades 4 or 7) may be a highly select group. The decision to enroll in an immersion programme is made with the added information of the student's past school experience. Thus, it could be that the best students are encouraged to switch programmes and are included in these late entry French immersion groups.

In summary, attempts have been made to correct the data for the limitations of the project either by statistical analysis or in the interpretation of the results.

III - RESEARCH METHOD

A) Subjects

All students enrolled in early, intermediate or late French immersion programmes at the grade 6 and 9 levels were selected for the evaluation. A total of 506 students in seven school divisions and eleven schools were retained as the actual population of this study (Table 1).

TABLE 1

TOTAL POPULATION INVOLVED IN THE STUDY, BY GRADE AND TYPE

Grade \ Type	Immersion students	Comparative group	Parents	Teachers	Principals and vice-principals
6 original	348	100	348	)	)
				) 300	) 70
6 actual	347	104	195	)	)
9 original	200	100	200	)	)
				) 267	) 41
9 actual	159	90	89	)	)

At the grade 6 level, four classes of Français students and, at the grade 9 level, five classes of Français students who had been enrolled in a Français programme for at least the last three years formed the comparative group. The schools were selected to meet the following criteria: a) the maximum amount of French permissible by law was taught, b) all students in the school were enrolled in the Français programme and c) there was an equal number of rural and urban

students. If, within these schools, there was more than one class at a given level, the class was selected randomly. If some students had been enrolled in a programme other than Français during the last three years (for example, French immersion), their files were eliminated from the analysis.

The parent population consisted of parents of all immersion students at these levels. Of a possible total of 506, 284 (56.1%) parents' questionnaires were completed. Furthermore, 267 (89.0%)teachers and 41 (58.6%) principals or vice-principals completed questionnaires.

B) Tests and questionnaires

a) Student school experience

The student school experience questionnaire was completed for each class by the school principal's office. The information gathered includes the type of school setting and the type of programme followed by the student during the previous three years (see Appendix 1).

b) The Canadian Test of Basic Skills

This widely used test battery is designed to evaluate the skills necessary for educational development. Four subtests were administered to the grade 6 students. Vocabulary and Reading Comprehension measure skills in the English language. Concepts and Problem Solving measure skills in mathematics.

c) Stanford Task Level I

This test is part of the Stanford Achievement test battery. It is commonly used in some school divisions in Manitoba. Two subtests were administered to the grade 9 students: English and mathematics.

The school divisions administered the tests in fall or spring, corrected them and forwarded the raw scores and percentiles of each student to the researchers.

d) The Cloze tests

The Cloze tests were developed by the Protestant School Board of Greater Montréal. In grade 6, the title of the text is "Mireille Mathieu, un mignon petit bout de femme" and in grade 9, "Capitale mondiale de l'orchidée".

The completed tests were scored by the researchers. The total exact response method was used.

e) The Aural Comprehension test

At the grade 6 and 9 levels, two different tests were prepared by the research staff for the 1980-81 study. These included short passages dealing with a variety of topics. Short questions were asked after each passage was read. The objective of each question was to measure the students' aural comprehension.

The first versions were pretested in 1980 at the grade 5 level (for the grade 6 test) and at the grade 8 level (for the grade 9 test) in French immersion and Français classes. Of the first version, only the items having a discrimination index of .30 or more were retained for the final version used in the research. The 1980 final version of these tests was used in this study.

f) Writing skills

At each grade level, a pictorial strip with content appropriate for the students' age was presented. The students were asked to describe the story suggested by the pictures and to tell what the characters were thinking. There was no time limit nor was there a limit on the length of the written story. The test administrators were not allowed to translate words nor were the students allowed to use a dictionary. The average testing session was expected to last approximately 20 minutes. This test had been developed for the 1980-81 study and was used without modification.

Before the writing samples were scored, all identification of the student was removed and a number was assigned. The writing samples were scored twice by different evaluators and the final score on the four scales (1) was the average of the scores given by the evaluators. The evaluators' mother tongue is French and they were trained in the use of the scoring scales (2).

1. See Appendix 2 for details of the scales.
2. M. Raymond Théberge of the Bureau de l'Éducation française trained the evaluators.

g) Non-verbal intelligence test

The "Reasoning" test by Jean Courval was administered by the school divisions and was scored by the researchers.Directives for this non-verbal test were given either in English or in French.

h) Oral production test

The oral production test consisted of an oral interview and an oral narration. The test, developed for the 1980-81 study, was designed to compare the groups on five linguistic measures: comprehension, pronunciation, grammar and syntax, vocabulary and communication.

The oral interview consisted of a series of questions dealing with topics of general interest: school, sports, hobbies, camping, etc. This part of the test was designed to develop a communicative situation. The test administrators were trained to administer the test.

The oral narration consisted of a presentation of a pictorial strip to the student who then related the story to the test administrator. This part of the test was designed to permit a comparison based on a new and structured situation. The interview and the narration were recorded on tape.

The oral samples were coded by the test administrators. Two evaluators scored all oral samples. They were trained in the use of the oral

scales by a linguist (1). The oral samples were scored twice and the final score on the five scales is the average of the scores given by the evaluators. The evaluators' mother tongue is French.

i) The student questionnaire

The student questionnaire was developed by the researchers in 1980 and was shortened for the present study. The content of the questionnaire included the students' perception of their use of French and of their contacts in French, their intentions to pursue their studies in the French immersion programme and their extracurricular activities.

The questionnaires were reviewed by the Advisory Committee, were administered by the school divisions and were coded by the researchers. The questionnaire is reproduced in Appendix 3.

j) The teachers' and principals' questionnaires

The 1980-81 questionnaires were based on the Teacher Survey and Principal Survey developed by the Ontario Institute for Studies in Education. The researchers modified and shortened the previous

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1. M. Raymond Théberge of the Bureau de l'Education française trained the evaluators. For details of the scales used, see Appendix 2.

version. The Advisory Committee reviewed the version used in the present study. It is reproduced in Appendix 3.

The teachers' questionnaire sought detailed information about teaching experience, teacher training, professional development, various aspects of the teachers' language background and their satisfaction with the immersion programme. Questions dealing with the use of French in the school and their choice of teaching situation are also included. The teachers' questionnaire was translated into French and was available to teachers requesting it.

The principals' questionnaire contained many of the questions in the teachers' questionnaire as well as some questions relating to the administration of the French immersion programme.

k) The parents' questionnaire

This questionnaire, a modified and shortened version of the one used in 1980-81, seeks information on the family (e.g., children), the languages spoken at home and the parents' occupation, education and family income. Questions on satisfaction with the programme, the use of French and participation in activities conducted in French are also included.

The questionnaire was reviewed by the Advisory Committee. It is reproduced in Appendix 3.

C) Schedules and procedures of test and questionnaire administration

Each school division participating in the research project designated at least one person to liaise with the researchers. Since school divisions were responsible for data gathering by means of tests and questionnaires for all but the Oral Production test, a detailed timetable was established.

The Student School Experience questionnaire, used in the selection of the student samples for the Oral Production test, was the first to be completed and returned to the researchers. It also served as the master file for all student information and results collected for this project. These data allowed the researchers to eliminate from the target population students who had not been in the same programme and in the same setting for the last three years.

The Canadian Test of Basic Skills and the Stanford Task test are standardized tests with which teachers have experience. No supplementary training was required. Some school divisions had administered these tests in October 1982 while others did so in May and June 1983.

Since the other tests and questionnaires were unknown to teachers, the school divisions determined the number of test administrators required. The administrators received a training session from the researchers.

This included training to administer the Cloze test, the Writing Skills test, the group intelligence test, the Aural Comprehension test and the student questionnaire. Great care was taken to ensure that only the researchers had access to the completed student questionnaires, thus ensuring students of the confidentiality of their responses.

The Department of Education was responsible for the administration of the teachers' and principals' questionnaires in all schools offering an immersion programme. School divisions or the Department of Education forwarded the parents' questionnaire to all parents of students in the grades 6 and 9 target population. The completed questionnaires were to be returned directly to the researchers. Every effort was made to guarantee the confidentiality of student, teacher, principal and parent responses on their respective questionnaires.

IV - PRESENTATION OF RESULTS

The first section of this chapter describes the student population and the method used to group students at each grade level. The second section deals with the variables used for the socio-economic status index and with its calculation. It also describes the use of the intelligence test results. Achievement results are discussed in the following section. The responses to the students', parents', teachers' and principals' questionnaires are presented in the last section of this chapter.

A) Descriptive statistics of the student population

Table 2 presents the total population of the schools that participated in the study and the actual student and parent populations retained for analysis in the study.

TABLE 2

TOTAL ACTUAL POPULATION AND STUDENT AND PARENT POPULATION RETAINED FOR ANALYSIS, BY GRADE

Grade	Number of students tested	Student		Parent	
		Number retained	% of total	Number retained	% retained*
6	347	301	86.7	195	64.8
9	159	150	94.3	89	59.3
Total	506	451	89.1	284	63.0

* The percentage of parents retained is calculated by dividing the number of parents retained by the number of students retained, e.g. 195/301 = 64.8%.

Within the classes included in the study, students had to meet one criterion to be included in the analysis: they had to have been enrolled in the same type of programme in the same setting during each of the two preceding years. For example, at the grade 9 level, the late immersion students had to have entered the programme in grade 7.

After this criterion was applied, 86.7% of the grade 6 students and 94.3% of the grade 9 students were retained for analysis.

Considering only the students who remained in the study after the criterion had been applied, 63% of these students' parents returned a postal questionnaire. This percentage decreases from 64.8% at the grade 6 level to 59.3% at the grade 9 level.

Table 3 presents the number of classes tested by type of setting, by programme and by grade. At the grade 6 level, there are nine early

TABLE 3

NUMBER OF CLASSES, BY GRADE, SETTING AND PROGRAMME

Setting and programme / Grade	Immersion				Dual track				TOTAL
	Total		Partial		Total		Partial		
	Early	Late*	Early	Late*	Early	Late*	Early	Late*	
6	9	1	1	0	2	3	0	0	16
9	0	0	0	0	1	2	0	6	9
Total	9	1	1	0	3	5	0	6	25

*intermediate or late

total immersion classes, one intermediate total and one early partial immersion class in an immersion setting. In the dual track setting, there are two early total immersion classes and three intermediate total immersion classes (grade 4 entry). There is no intermediate or late partial immersion class in either setting and no early partial immersion class in a dual track setting.

At the grade 9 level, no class in an immersion setting participated in the study because of a local decision. There are two late total immersion classes and one early total now in a partial immersion programme in a dual track setting. Six late partial immersion classes in a dual track setting complete the student population at the grade 9 level.

The small number of classes and students in some groups is a major limitation of this research. If the twenty-five classes had been distributed equally in all types of settings and programmes, more varied comparisons would have been possible. The uneven distribution of the classes and the limited number of programmes impose a research limitation which reflects the present state of immersion programmes in Manitoba.

As indicated in chapter III, four Français classes at the grade 6 level and five at the grade 9 level were selected to form the French comparative group for results in the French proficiency tests.

Table 4 indicates how the French immersion student population and the French comparative classes were divided into groups according to the type of programme and setting.

TABLE 4

PERCENTAGE OF INSTRUCTION IN FRENCH, BY GROUP AND GRADE

GRADE 6

Group	ETIS	ETDT	ITIS	EPIS	ITDT	French comparative
Average percentage of instruction in French	77	73	75	50	72	N.A.
Number of students	168	30	18	18	67	104
Subsample - 1*	56	28	16	18	54	46
Subsample - 2**	27	10	16	17	25	40

GRADE 9

Group	TPDT	LPDT	LTDT	French comparative
Average percentage of instruction in French	57	57	74	N.A.
Number of students	28	102	29	90
Subsample - 1*	26	47	29	52
Subsample - 2**	20	19	25	32

* random sample used for analysis of achievement results except Writing Skills and Oral Production

** random sample used for analysis of Writing Skills and Oral Production results

In grade 6, six groups were established and are defined as follows:

Group ETIS Early total immersion programme in an immersion setting. No distinction is made regarding the introduction of reading in French or in English (168 students; the average percentage of instruction in French is 77)

Group ETDT Early total immersion programme in a dual track setting (30 students; the average percentage of instruction in French is 73)

Group ITIS Intermediate total (grade 4) immersion programme in an immersion setting (18 students; the average percentage of instruction in French is 75)

Group EPIS Early partial immersion programme in an immersion setting (18 students; the average percentage of instruction in French is 50)

Group ITDT Intermediate total (grade 4) immersion programme in a dual track setting (67 students; the average percentage of instruction in French is 72)

French comparative group (104 students)

In grade 9, four groups were established and are defined as follows:

Group TPDT Partial immersion programme in a dual track setting. These students were previously in an early total immersion programme (28 students; the average percentage of instruction in French is 57)

Group LPDT Late partial immersion programme in a dual track setting (102 students; the average percentage of instruction in French is 57)

Group LTDT Late total immersion programme in a dual track setting (29 students; the average percentage of instruction in French is 74)

French comparative group (90 students)

The average percentage of instruction in French refers to the total time during which French is used as the language of instruction in relation to total instruction time(1). For the total immersion programmes, the average percentage of instruction conducted in French varies from 72 to 77. The percentage for partial immersion programmes varies from 50 to 57.

There are substantial differences in the number of students in the groups. Three alternative approaches can be considered: eliminating the smaller groups from the analysis, including all students in the analysis or randomly selecting approximately equal numbers of students in each group. The third alternative was chosen by the Advisory Committee. It consists of including all students in groups smaller than fifty students for all the achievement analyses (except Writing Skills and Oral Production) and randomly selecting approximately fifty students in the larger groups.

For the Writing Skills and the Oral Production tests, all students were included in the smaller groups and between twenty-five and forty-nine students were randomly selected in the larger groups. Appropriate statistical techniques were used to correct for differences in unequal groups.

B) Socio-economic status index and Intelligence quotient

As indicated previously, 63% of all parents of students retained for analysis in this study returned a questionnaire. The parent

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1. Data supplied by the Bureau de l'Éducation française, July 1983.

questionnaire was designed to allow each to be matched with the individual student's file. The analysis of parents' questionnaires is restricted to parents whose children were retained for this study.

Five questions sought information on variables usually used in creating a socio-economic status index: the occupation of each parent and their respective levels of education and family income. The father's and mother's occupations were rank ordered. The scale used is presented in Appendix 4.

Using the factor score coefficients of the factor analysis of these data, multiplied by the score of each respective variable, a socio-economic status index was created for each student. When one or two variables were missing, the index was calculated by using the mean of the remaining variables. When information on three or more variables was missing, the index attributed to the student file was the average index of the completed files in the class in which the student was enrolled.

The non-verbal reasoning test was administered by the schools. It was corrected by the researchers and the standard scales were used to provide the results included in all the analyses of covariance.

C) Achievement in English and mathematics

1) Grade 6

The analyses of covariance on achievement in English Vocabulary and Reading, and the Mathematics Problems and Concepts subtests on the

Canadian Test of Basic Skills, are presented in Table 5. The covariates are the intelligence quotient and the socio-economic status index. There are statistically significant differences on the Mathematics Concepts subtest. There is no statistically significant difference among groups in English Reading and Vocabulary nor in the Mathematics Problems subtest.

TABLE 5

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE ENGLISH AND MATHEMATICS TESTS*, IMMERSION STUDENTS, BY GROUP - GRADE 6

Group \ Test		C.T.B.S. Vocabulary Percentiles	C.T.B.S. Reading Percentiles	C.T.B.S. Maths Problems	C.T.B.S. Maths Concepts
ETIS	N = 56	64.60	63.84	70.40	64.63
		(65.30)	(64.41)	(71.61)	(65.71)
ETDT	N = 28	76.84	61.80	64.71	59.00
		(76.75)	(61.18)	(65.00)	(59.32)
ITIS	N = 15	61.46	56.42	64.05	59.04
		(62.53)	(58.53)	(64.74)	(59.53)
EPIS	N = 18	60.54	46.34	53.06	42.71
		(57.38)	(42.83)	(48.50)	(38.72)
ITDT	N = 54	66.30	57.82	60.88	53.39
		(66.38)	(58.13)	(60.80)	(53.29)
Significance of F on adjusted scores		0.070	0.099	0.063	0.014

*The means in parentheses are unadjusted; the scores above these are adjusted for I.Q. and S.E.S. The level of significance of .05 is used to determine statistically significant differences. Tests of differences among means are performed on data for which the ANCOVA has identified a statistically significant difference.

Table 5A presents tests of differences among means using the Scheffe Test and correcting for differences between the unequal "n's" in each cell. In Mathematics Concepts, the early total immersion group in an immersion setting scored higher than the early partial immersion group in an immersion setting and the difference is statistically significant.

TABLE 5A

TEST OF DIFFERENCES AMONG MEANS, C.T.B.S. MATHS CONCEPTS - GRADE 6

Group	Mean	ETIS N=56	ETDT N=28	ITIS N=15	EPIS N=18	ITDT N=54
ETIS	64.63			5.59	21.92*	11.24
ETDT	59.00			.04	16.29	5.61
ITIS	59.04				16.33	5.65
EPIS	42.71					10.68
ITDT	53.39					

* $p<.05$ - ** $p<.01$ - *** $p<.001$

Table 5B presents the tests of differences among means. The unadjusted group means are compared to the national norm means. The T test was used to compare the national norm mean of fifty to the sample (group) mean.

TABLE 5B

TEST OF DIFFERENCES AMONG MEANS, CANADIAN NORMS - GRADE 6

Group / Test		English Vocabulary	English Reading	Maths Problems	Maths Concepts
ETIS	N = 56	15.30**	14.41**	21.61**	15.71**
ETDT	N = 28	26.75***	11.18	15.00	9.32
ITIS	N = 15	12.53	8.53	14.73	9.53
EPIS	N = 18	7.39	-7.17	-1.50	-11.28
ITDT	N = 54	16.39**	8.13	10.80**	3.30

* $p<.05$ - ** $p<.01$ - *** $p<.001$

Note: The scores presented in this table are the differences from the national mean of fifty. Thus, for group ETIS, the group mean on English Vocabulary is 65.30 (50.00 + 15.30).

The early total immersion group in an immersion setting obtained a higher mean score on all Canadian Test of Basic Skills than the national mean. The early total immersion group in a dual track setting obtained a higher score than the national mean on English Vocabulary whereas the intermediate total immersion group in a dual track setting did so on English Vocabulary and Mathematics Problems. These differences are statistically significant.

2) Grade 9

At the grade 9 level, two tests were administered. The first deals with English language skills and the second with mathematics. Mean scores are expressed in percentiles in Table 6. The analysis of covariance indicates no statistically significant difference among groups at the .05 level.

TABLE 6

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE ENGLISH AND MATHEMATICS TESTS*, IMMERSION STUDENTS, BY GROUP - GRADE 9

Test / Group		Stanford English Percentiles	Stanford Mathematics Percentiles
TPDT	N= 26	60.28 (58.34)	66.48 (65.31)
LPDT	N= 47	69.24 (67.06)	70.47 (68.81)
LTDT	N= 29	75.72 (81.00)	72.57 (76.31)
Significance of F on adjusted scores		0.055	0.520

* The means in parentheses are unadjusted; the scores above these are adjusted for I.Q. and S.E.S. The level of significance of .05 is used to determine statistically significant differences. Tests of differences among means are performed on data for which the ANCOVA has identified a statistically significant difference.

Table 6A presents the results of the tests of differences among means. The unadjusted group means are compared to the national norm means. The T test was used to compare the national mean of fifty to the sample (group) mean.

Although all groups scored higher than the national norm on the English and mathematics measures, group TPDT (early total immersion now in partial immersion) did not obtain a statistically significant higher score than the national norm on the English test. Groups LPDT and LTDT obtained significantly higher scores than the national mean on the English test. The three groups scored higher than the national mean on the mathematics test and the differences are statistically significant.

TABLE 6A

TEST OF DIFFERENCES AMONG MEANS, CANADIAN NORMS - GRADE 9

Group \ Test		English	Mathematics
TPDT	N = 26	8.35	15.31**
LPDT	N = 47	17.06**	18.81***
LTDT	N = 29	31.00***	26.31***

* $p<.05$ - ** $p<.01$ - *** $p<.001$

The scores presented in this Table are the differences from the national mean of fifty. Thus, for group TPDT, the group mean in English is 58.35 (50.00 + 8.35).

D) French language skills

The French language skills at the two levels were measured by the Cloze test and the Aural Comprehension test. Since all the analyses on these tests were performed on the raw scores, it is important to indicate the number of items at each grade level.

Table 7 shows the total number of items in each test and at each grade level.

TABLE 7

NUMBER OF ITEMS IN FRENCH TESTS, BY TEST AND GRADE

Test \ Grade	6	9
Cloze test	25	31
Aural Comprehension test	22	23

Two other measures of French language skills were used. They are the Writing Skills test and the Oral Production test (see Chapter III for a description). The French immersion groups are compared to the French comparative group on all measures.

1) Grade 6

The analyses of covariance of the adjusted raw scores of the Cloze and Aural comprehension tests are presented in Table 8. Statistically significant differences are found on both measures.

Tables 8A and 8B present the tests of differences among means of the Cloze and Aural Comprehension tests. The French comparative group obtained statistically significant higher scores than all the French immersion groups. The early total immersion groups in the immersion and dual track settings and the intermediate total immersion group in the immersion setting (groups ETIS, ETDT and ITIS respectively) obtained statistically significant higher results than the early partial immersion group and the intermediate total immersion group in a dual track setting (groups EPIS and ITDT respectively). The differences between the latter two groups are not statistically significant.

TABLE 8

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE CLOZE AND AURAL COMPREHENSION TESTS*, BY GROUP - GRADE 6

Group \ Test	Cloze	Aural Comprehension
ETIS N = 56	9.01 (9.14)	11.68 (11.80)
ETDT N = 28	7.37 (7.43)	11.61 (11.71)
ITIS N = 15	8.40 (8.47)	11.54 (11.46)
EPIS N = 18	4.84 (4.45)	9.21 (8.94)
ITDT N = 54	4.66 (4.67)	9.50 (9.48)
French comparative group N = 46	11.5	13.21
Significance of F	0.000	0.000
Maximum score	25	22

* The means in parentheses are unadjusted; the scores above these are adjusted for I.Q. and S.E.S.

TABLE 8A

TEST OF DIFFERENCES AMONG MEANS - CLOZE TEST - GRADE 6

Group	Mean	ETIS N=56	ETDT N=28	ITIS N=15	EPIS N=18	ITDT N=54	French comparative group N=46
ETIS	9.01	-	1.64	0.61	4.17***	4.35***	2.14*
ETDT	7.37		-	1.03	2.53*	2.71**	3.78***
ITIS	8.40			-	3.56*	3.74***	2.75*
EPIS	4.84				-	0.18	6.31***
ITDT	4.66					-	6.49***
French comparative group	11.15						-

* = $p<.05$ - ** = $p<.01$ - *** = $p<.001$

TABLE 8B

TEST OF DIFFERENCES AMONG MEANS - AURAL COMPREHENSION - GRADE 6

Group	Mean	ETIS N=56	ETDT N=28	ITIS N=15	EPIS N=18	ITDT N=54	French comparative group N=46
ETIS	11.68	-	0.07	0.14	2.47*	2.18***	1.53*
ETDT	11.61		-	0.07	2.40*	2.11**	1.60*
ITIS	11.54			-	2.33*	2.04*	1.67*
EPIS	9.21				-	0.29	4.00***
ITDT	9.50					-	3.71***
French comparative group	13.21						-

* = $p < .05$ - ** = $p < .01$ - *** = $p < .001$

The analyses of covariance of the results of each scale and the average total of the Writing Skills test are presented in Table 9. Statistically significant differences at the .001 level are found for all measures and the average total.

Tables 9A to 9E present the tests of differences among means of the groups for all measures. The general pattern that is apparent in these analyses can be summed up as follows: the French comparative group generally scored higher than all the French immersion groups and the differences are statistically significant. The early total immersion groups (groups ETIS and ETDT) scored higher than the intermediate total or partial French immersion groups. The intermediate total immersion group in a dual track setting scored lower than the other French immersion groups.

TABLE 9

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE WRITING SKILLS TEST*, BY GROUP - GRADE 6

Group \ Writing Skills	Spelling	Grammar and Syntax	Vocabulary	Communication	Average total
ETIS N = 27	3.09 (3.06)	2.91 (2.87)	3.72 (3.69)	4.18 (4.13)	3.47 (3.43)
ETDT N = 9	3.42 (3.45)	3.16 (3.17)	3.71 (3.84)	4.30 (4.32)	3.84 (3.86)
ITIS N = 16	3.26 (3.25)	2.93 (2.94)	3.36 (3.35)	3.77 (3.78)	3.26 (3.26)
EPIS N = 17	2.88 (2.86)	2.85 (2.80)	3.53 (3.50)	3.74 (3.68)	3.24 (3.20)
ITDT N = 25	2.82 (2.84)	2.57 (2.60)	2.95 (2.90)	3.05 (3.10)	2.87 (2.90)
French comparative group N = 38	3.70	3.72	4.24	5.00	4.00
Significance of F	0.000	0.000	0.000	0.000	0.000

* See Appendix 2 for the definition of each scale and the scoring procedure.

The means in parentheses are unadjusted: the scores above these are adjusted for I.Q. and S.E.S. The maximum score is 5.0.

TABLE 9A

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS SPELLING - GRADE 6

Group	Mean	ETIS N=27	ETDT N=9	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=38
ETIS	3.09	-	0.33	0.17	0.21	0.27	0.61
ETDT	3.42		-	0.16	0.54	0.60	0.28
ITIS	3.26			-	0.38	0.44	0.44
EPIS	2.88				-	0.06	0.82**
ITDT	2.82					-	0.88**
French comparative group	3.70						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 9B

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS

GRAMMAR AND SYNTAX - GRADE 6

Group	Mean	ETIS N=27	ETDT N=9	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=38
ETIS	2.91	-	0.25	0.02	0.06	0.40	0.81**
ETDT	3.16		-	0.23	0.31	0.65*	0.56*
ITIS	2.93			-	0.08	0.42	0.79**
EPIS	2.85				-	0.34	0.87**
ITDT	2.51					-	1.21**
French comparative group	3.72						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 9C

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS

VOCABULARY - GRADE 6

Group	Mean	ETIS N=27	ETDT N=9	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=38
ETIS	3.72	-	0.01	0.36	0.19	0.77*	0.52*
ETDT	3.71		-	0.35	0.18	0.76*	0.53*
ITIS	3.36			-	0.17	0.41	0.88*
EPIS	3.53				-	0.58	0.71*
ITDT	2.95					-	1.29***
French comparative group	4.24						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 9D

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS

COMMUNICATION - GRADE 6

Group	Mean	ETIS N=27	ETDT N=9	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=38
ETIS	4.18	-	0.12	0.41*	0.44*	1.13***	0.82***
ETDT	4.30		-	0.53*	0.56*	1.25***	0.70**
ITIS	3.77			-	0.03	0.72*	1.23***
EPIS	3.74				-	0.69*	1.26***
ITDT	3.05					-	1.95***
French comparative group	5.00						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 9E

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS

AVERAGE TOTAL - GRADE 6

Group	Mean	ETIS N=27	ETDT N=9	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=38
ETIS	3.47	-	0.37	0.21	0.23	0.60*	0.53*
ETDT	3.84		-	0.58	0.60	0.97*	0.16
ITIS	3.26			-	0.02	0.39	0.74*
EPIS	3.24				-	0.37	0.76*
ITDT	2.87					-	1.13***
French comparative group	4.00						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

The analyses of covariance of the results of the Oral Production test are presented in Table 10. Statistically significant differences at the .001 level are found for all measures and the average total.

The results of the tests of differences among means indicate that the major differences are found between the French comparative group and the French immersion groups, the latter obtaining statistically significant lower results (see Tables 10A to 10F). Some statistically significant differences are observed among immersion groups: generally, the total immersion groups ETIS and ITIS (early and intermediate) in an immersion setting scored higher than the other groups. The early total immersion group in a dual track setting obtained higher results than the partial immersion group and the intermediate total immersion group in a dual track setting.

TABLE 10

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE ORAL PRODUCTION TEST*, BY GROUP - GRADE 6

Group \ Oral Production	Compre-hension	Pronun-ciation	Grammar and Syntax	Vocabu-lary	Communi-cation	Average total
ETIS N = 27	4.66 (4.66)	3.91 (3.90)	3.26 (3.24)	3.24 (3.22)	5.00 (4.99)	4.02 (4.01)
ETDT N = 10	4.34 (4.35)	3.72 (3.70)	3.16 (3.20)	3.20 (3.20)	4.93 (4.90)	3.90 (3.90)
ITIS N = 16	4.69 (4.68)	3.95 (3.96)	3.24 (3.22)	3.34 (3.34)	4.98 (5.00)	4.06 (4.06)
EPIS N = 17	4.41 (4.41)	3.57 (3.55)	2.89 (2.88)	2.78 (2.76)	4.92 (4.89)	3.72 (3.70)
ITDT N = 25	4.15 (4.16)	4.16 (4.18)	2.61 (2.62)	2.50 (2.52)	4.56 (4.58)	3.41 (3.42)
French comparative group N = 40	4.98	4.90	4.55	4.45	5.00	4.77
Significance of F	0.000	0.000	0.000	0.000	0.000	0.000

* See Appendix 2 for the details of the scales and the scoring procedure.

The means in parentheses are unadjusted; the scores above these are the means adjusted for I.Q. and S.E.S. The maximum score is 5.0.

TABLE 10A

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION

COMPREHENSION - GRADE 6

Group	Mean	ETIS N=27	ETDT N=10	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=40
ETIS	4.66	-	0.32	0.03	0.25	0.51***	0.32*
ETDT	4.34		-	0.35	0.07	0.19	0.64***
ITIS	4.69			-	0.28	0.54***	0.29
EPIS	4.41				-	0.26	0.57***
ITDT	4.15					-	1.83***
French comparative group	4.98						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 10B

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION

PRONUNCIATION - GRADE 6

Group	Mean	ETIS N=27	ETDT N=10	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=40
ETIS	3.91	-	0.19	0.04	0.34*	0.25	0.99***
ETDT	3.72		-	0.23	0.15	0.44*	1.18***
ITIS	3.95			-	0.38	0.21	0.95***
EPIS	3.57				-	0.59***	1.33***
ITDT	4.16					-	0.74***
French comparative group	4.90						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 10C

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION

GRAMMAR AND SYNTAX - GRADE 6

Group	Mean	ETIS N=27	ETDT N=10	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=40
ETIS	3.26	-	0.10	0.02	0.37	0.65***	1.29***
ETDT	3.16		-	0.08	0.27	0.55*	1.39***
ITIS	3.24			-	0.35	0.63***	1.31***
EPIS	2.89				-	0.28	1.66***
ITDT	3.61					-	1.94***
French comparative group	4.55						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 10D

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION

VOCABULARY - GRADE 6

Group	Mean	ETIS N=27	ETDT N=10	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=40
ETIS	3.24	-	0.04	0.10	0.46*	0.74***	1.21***
ETDT	3.20		-	0.14	0.42	0.70**	1.25***
ITIS	3.34			-	0.56*	0.84***	1.11***
EPIS	2.78				-	0.28	1.67***
ITDT	2.50					-	1.95***
French comparative group	4.45						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 10E

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION

COMMUNICATION - GRADE 6

Group	Mean	ETIS N=27	ETDT N=10	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=40
ETIS	5.00	-	0.07	0.02	0.08	0.44***	0.00
ETDT	4.93		-	0.05	0.01	0.37	0.07
ITIS	4.98			-	0.06	0.42**	0.02
EPIS	4.92				-	0.36*	0.08
ITDT	4.56					-	0.44***
French comparative group	5.00						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 10F

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION

AVERAGE TOTAL - GRADE 6

Group	Mean	ETIS N=27	ETDT N=10	ITIS N=16	EPIS N=17	ITDT N=25	French comparative group N=40
ETIS	4.02	-	0.12	0.04	0.30	0.61***	0.75***
ETDT	3.90		-	0.16	0.18	0.49***	0.87***
ITIS	4.06			-	0.34*	0.65***	0.71***
EPIS	3.72				-	0.31	1.05***
ITDT	3.41					-	1.36***
French comparative group	4.77						-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

2) Grade 9

Table 11 presents the analyses of covariance of the results of the Cloze and Aural Comprehension tests. Statistically significant differences at the .05 level of probability are observed for both tests.

TABLE 11

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE CLOZE AND AURAL COMPREHENSION TESTS*, BY GROUP - GRADE 9

Group \ Test		Cloze	Aural Comprehension
TPDT	N = 26	12.39 (13.46)	15.76 (15.27)
LPDT	N = 47	11.19 (10.73)	12.37 (12.06)
LTDT	N = 29	10.55 (11.36)	13.63 (14.62)
French comparative group	N = 52	13.91	17.11
Significance of F		0.000	0.000
Maximum score		31.0	23.0

* The means in parentheses are unadjusted; the scores above these are the means adjusted for I.Q. and S.E.S.

As shown in Table 11A, the tests of differences among means on the Cloze test indicate that the French comparative group obtained statistically significant higher scores than the late immersion groups (groups LPDT and LTDT). The French immersion groups did not obtain statistically significant different scores.

Table 11B presents the test of differences among means for the Aural Comprehension test. The French comparative group obtained statistically significant higher results than the late immersion groups (LPDT and LTDT). The early immersion group (TPDT) obtained statistically significant higher results than the late partial immersion group. The late total and late partial groups did not obtain results which, statistically, were significantly different.

TABLE 11A

TEST OF DIFFERENCES AMONG MEANS - CLOZE TEST - GRADE 9

Group	Mean	TPDT N=26	LPDT N=47	LTDT N=29	French comparative group N=52
TPDT	12.39	-	1.20	1.84	1.52
LPDT	11.19		-	0.64	2.72***
LTDT	10.55			-	3.36***
French comparative group	13.91				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 11B

TEST OF DIFFERENCES AMONG MEANS - AURAL COMPREHENSION - GRADE 9

Group	Mean	TPDT N=26	LPDT N=47	LTDT N=29	French comparative group N=52
TPDT	15.76	-	3.39***	2.13	1.35
LPDT	12.37		-	1.26	4.74***
LTDT	13.63			-	3.48***
French comparative group	17.11				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

Table 12 presents the analyses of covariance of the individual scales and the average total results of the Writing Skills test. Statistically significant differences are observed on all scales and with the average total.

The results of the tests of differences among means in Tables 12A to 12E can be summed up as follows. Generally, the French comparative group demonstrates better writing skills than the French immersion groups; the differences are statistically significant. Within French immersion groups, comparisons indicate that the early total immersion group (TPDT) obtained slightly better results than the late immersion groups. The intermediate total immersion group (LTDT) obtained slightly better results than the late partial immersion group (LPDT).

TABLE 12

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE WRITING SKILLS TEST*, BY GROUP - GRADE 9

Writing Skills / Group		Spelling	Grammar and Syntax	Vocabulary	Communication	Average total
TPDT	N = 19	3.46	3.20	3.81	4.18	3.67
		(3.53)	(3.21)	(3.79)	(4.13)	(3.67)
LPDT	N = 17	3.15	2.61	3.05	3.69	3.17
		(3.12)	(2.59)	(3.06)	(3.67)	(3.15)
LTDT	N = 24	3.72	2.99	3.61	4.04	3.60
		(3.71)	(3.00)	(3.65)	(4.12)	(3.63)
French comparative group	N = 31	4.16	3.95	4.19	4.41	4.17
Significance of F		0.000	0.000	0.000	0.035	0.000

* See Appendix 2 for definitions and scales.

The means in parentheses are unadjusted; the scores above these are the means adjusted for I.Q. and S.E.S. The maximum score is 5.0.

TABLE 12A

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS - SPELLING - GRADE 9

Group	Mean	TPDT N=19	LPDT N=17	LTDT N=24	French comparative group N=31
TPDT	3.46	-	0.31	0.26	0.70*
LPDT	3.15		-	0.57	1.01***
LTDT	3.72			-	0.44
French comparative group	4.16				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 12B

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS - GRAMMAR AND SYNTAX - GRADE 9

Group	Mean	TPDT N=19	LPDT N=17	LTDT N=24	French comparative group N=31
TPDT	3.20	-	0.59*	0.21	0.75***
LPDT	2.61		-	0.38	1.34***
LTDT	2.99			-	0.96***
French comparative group	3.95				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 12C

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS - VOCABULARY - GRADE 9

Group	Mean	TPDT N=19	LPDT N=17	LTDT N=24	French comparative group N=31
TPDT	3.81	-	0.76***	0.20	0.38
LPDT	3.05		-	0.56*	1.14***
LTDT	3.61			-	0.58**
French comparative group	4.19				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 12D

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS - COMMUNICATION - GRADE 9

Group	Mean	TPDT N=19	LPDT N=17	LTDT N=24	French comparative group N=31
TPDT	4.18	-	0.49	0.14	0.23
LPDT	3.69		-	0.35	0.72*
LTDT	4.04			-	0.37
French comparative group	4.41				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 12E

TEST OF DIFFERENCES AMONG MEANS - WRITING SKILLS -

AVERAGE TOTAL - GRADE 9

Group	Mean	TPDT N=19	LPDT N=17	LTDT N=24	French comparative group N=31
TPDT	3.67	-	0.50*	0.07	0.50*
LPDT	3.17		-	0.43	1.00***
LTDT	3.60			-	0.57***
French comparative group	4.17				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

The analyses of covariance of the Oral Production test results are presented in Table 13. Statistically significant differences are observed on all measures except the Communication scale.

The tests of differences among means indicate that the French comparative group demonstrated better oral production skills than the French immersion groups (Tables 13A to 13E). The early total immersion group generally obtained statistically significant higher results than the two late immersion groups. Even though the late total immersion group obtained higher results than the late partial immersion group, the two were not, statistically, significantly different.

TABLE 13

ANALYSIS OF COVARIANCE OF THE RESULTS OF THE ORAL PRODUCTION TEST*,

BY GROUP - GRADE 9

Group \ Oral Production		Comprehension	Pronunciation	Grammar and Syntax	Vocabulary	Communication	Average total
TPDT	N = 20	4.87 (4.85)	4.17 (4.17)	3.47 (3.70)	3.89 (3.83)	4.98 (4.99)	4.33 (4.32)
LPDT	N = 19	4.23 (4.24)	3.22 (3.23)	2.74 (2.74)	2.70 (2.71)	4.79 (4.79)	3.53 (3.52)
LTDT	N = 25	4.54 (4.54)	3.31 (3.32)	3.08 (3.04)	2.88 (2.90)	4.89 (4.90)	3.75 (3.74)
French comparative group	N = 32	5.00	4.82	4.39	4.29	4.99	4.71
Significance of F		0.000	0.000	0.000	0.000	0.062	0.000

* See Appendix 2 for definitions and scales.

The means in parentheses are unadjusted; the scores above these are the means adjusted for I.Q. and S.E.S. The maximum score is 5.0.

TABLE 13A

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION - COMPREHENSION - GRADE 9

Group	Mean	TPDT N=20	LPDT N=19	LTDT N=25	French comparative group N=32
TPDT	4.87	-	0.64***	0.33*	0.13
LPDT	4.23		-	0.31	0.77***
LTDT	4.54			-	0.46***
French comparative group	5.00				-

* $p < .05$ - ** $p < .01$ - *** $p < .001$

TABLE 13B

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION - PRONUNCIATION - GRADE 9

Group	Mean	TPDT N=20	LPDT N=19	LTDT N=25	French comparative group N=32
TPDT	4.17	-	0.95***	0.86***	0.65***
LPDT	3.22		-	0.09	1.60***
LTDT	3.31			-	1.51***
French comparative group	4.82				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 13C

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION - GRAMMAR AND SYNTAX - GRADE 9

Group	Mean	TPDT N=20	LPDT N=19	LTDT N=25	French comparative group N=32
TPDT	3.47	-	0.73***	0.39	0.92***
LPDT	2.74		-	0.34	1.65***
LTDT	3.08			-	1.31***
French comparative group	4.39				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 13D

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION - VOCABULARY - GRADE 9

Group	Mean	TPDT N=20	LPDT N=19	LTDT N=25	French comparative group N=32
TPDT	3.89	-	1.19***	1.01***	0.40*
LPDT	2.70		-	0.18	1.59***
LTDT	2.88			-	1.41***
French comparative group	4.29				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

TABLE 13E

TEST OF DIFFERENCES AMONG MEANS - ORAL PRODUCTION - AVERAGE TOTAL - GRADE 9

Group	Mean	TPDT N=20	LPDT N=19	LTDT N=25	French comparative group N=32
TPDT	4.33	-	0.80***	0.58***	0.38***
LPDT	3.53		-	0.22	1.18***
LTDT	3.75			-	0.96***
French comparative group	4.71				-

* $p<.05$ - ** $p<.01$ - *** $p<.001$

E) Students' attitudes and activities

The objective of the students' questionnaire was to gather information that would give some insight into their achievement and linguistic results and assist in the interpretation of those results. Only the questionnaires completed by the students retained for the study were analysed.

Tables 14 and 15 present the students' perception of their use of French by group for grades 6 and 9 respectively. Students at both levels hardly ever use French outside the school situation (e.g., French television, radio, newspapers and magazines). Those in dual track settings use French less often within the school or the classroom than do students in immersion settings. Students in early total immersion programmes use French more often than do those in intermediate, late or partial immersion.

Students were asked whether they would continue in the French immersion programme if they had a choice. They were also asked to explain their preference. The reasons given by the students who wanted to continue were counted and the percentages were calculated by dividing the frequency of response by the number of students who indicated their desire to continue.

At the grade 6 level, between 79% and 86% of the total immersion students (early or late) indicated that they wish to continue in the

TABLE 14

STUDENTS' PERCEPTION OF THEIR USE OF FRENCH, BY GROUP - GRADE 6

Question \ Group	ETIS	ETDT	ITIS	EPIS	ITDT
Watch French television?	3.45	4.11	2.82	3.61	3.36
Listen to French radio?	4.05	4.82	4.59	4.56	4.19
Speak French to classmates in classroom?	1.83	2.71	1.77	3.00	2.11
Speak French to classmates outside the classroom?	2.31	3.86	2.13	4.17	3.44
Speak French to classmates outside the school?	3.93	4.78	4.24	4.28	4.28
Speak French to French teacher in the classroom?	1.13	1.18	1.25	1.56	1.28
Speak French to French teacher outside the classroom?	1.23	1.43	1.24	3.22	2.16
Read French newspapers and magazines outside the classroom?	3.67	3.89	2.94	4.39	4.11
Speak French outside the school?	3.49	3.79	3.76	3.61	3.53
Read French-language books other than textbooks?	2.58	3.82	2.06	3.56	2.56

1) Most of the time - 2) Often - 3) Sometimes

4) Hardly ever - 5) Never

TABLE 15

STUDENTS' PERCEPTION OF THEIR USE OF FRENCH, BY GROUP - GRADE 9

Question \ Group	TPDT	LPDT	LTDT
Watch French television?	3.81	3.94	3.70
Listen to French radio?	4.42	4.78	4.39
Speak French to classmates in classroom?	2.19	2.69	2.54
Speak French to classmates outside the classroom?	3.85	4.24	3.37
Speak French to classmates outside the school?	4.39	4.33	3.82
Speak French to French teacher in the classroom?	1.08	1.25	1.11
Speak French to French teacher outside the classroom?	1.23	1.60	1.25
Read French newspapers and magazines outside the classroom?	3.58	4.22	3.89
Speak French outside the school?	3.42	3.89	3.29
Read French-language books other than textbooks?	3.19	3.99	3.46

1) Most of the time - 2) Often - 3) Sometimes

4) Hardly ever - 5) Never

French immersion programme (Table 16). However, only 61% of the students in the partial immersion programme expressed the desire to continue. The major reasons given were that students anticipated that learning French would provide better job opportunities and that they enjoyed learning and speaking French.

TABLE 16

STUDENTS' DECISION TO CONTINUE IN THE FRENCH IMMERSION PROGRAMME AND REASONS, BY GROUP - GRADE 6

Decision / Group	ETIS N=175	ETDT N=28	ITIS N=17	EPIS N=18	ITDT N=64
Yes - will continue	85.7%	78.6%	88.2%	61.1%	82.8%
No - will not continue	6.3%	21.4%	5.9%	11.1%	10.9%
Don't know	8.0%	0.0%	5.9%	27.8%	6.3%
Reasons to continue (1)	**N=150**	**N=22**	**N=15**	**N=11**	**N=53**
	%	%	%	%	%
Better job opportunities	79.3	63.6	86.7	72.7	57.7
N=	(119)	(14)	(13)	(8)	(30)
Want to speak it better	15.3	4.5	20.0	0.0	7.5
N=	(23)	(1)	(3)	(0)	(4)
Enjoy learning and/or speaking French	46.7	50.0	40.0	72.7	58.5
N=	(70)	(11)	(6)	(8)	(31)
Have taken it in previous years - why quit now?	5.3	22.7	0.0	0.0	7.5
N=	(8)	(5)	(0)	(0)	(4)
Other positive comments	14.7	13.6	20.0	18.2	22.6
N=	(22)	(3)	(3)	(2)	(12)

(1) The numbers in parentheses indicate the frequency of the response.

At the grade 9 level, the percentage of students indicating that they wish to continue varies greatly from one group to another (Table 17). One-fourth (23%) of the early total immersion group, and more than half (54%) of the late partial immersion group, stated that they did not want to continue. More than nine-tenths (93%) of the students in the late total immersion programme indicated that they wanted to continue in the French immersion programme.

TABLE 17

STUDENTS' DECISION TO CONTINUE IN THE FRENCH IMMERSION PROGRAMME AND REASONS, BY GROUP - GRADE 9

Decision / Group		TPDT N=26	LPDT N=98	LTDT N=28
Yes - will continue		69.2%	28.6%	92.9%
No - will not continue		23.1%	54.1%	0.0%
Don't know		7.7%	17.3%	7.1%
Reasons to continue (1)		**N=18 %**	**N=28 %**	**N=26 %**
Better job opportunities	N=	61.1 (11)	60.1 (17)	69.2 (18)
Want to speak it better	N=	0.0 (0)	10.7 (3)	15.4 (4)
Enjoy learning and/or speaking French	N=	38.9 (7)	42.9 (12)	26.9 (7)
Have taken it in previous years - why quit now?	N=	16.7 (3)	7.1 (2)	11.5 (3)
Other positive comments	N=	16.7 (3)	10.7 (3)	23.1 (6)

(1) The numbers in parentheses indicate the frequency of the response.

The major reasons given by students who want to continue are that they anticipate better job opportunities, that they enjoy learning and speaking French, that they want to speak it better and that they have taken it in previous years.

Table 17A presents the reasons given by students who indicated they did not want to continue in the French immersion programme next year. Few reasons were given by group TPDT. However, in group LPDT, in which approximately half the students stated that they did not want to continue, the major reasons are that they have had enough French, that they want to learn more English or that they find French too hard.

TABLE 17A

REASONS GIVEN BY STUDENTS WHO DO NOT WANT TO CONTINUE IN THE FRENCH IMMERSION PROGRAMME, BY GROUP - GRADE 9

Reason / Group		TPDT N=6	LPDT N=53	LTDT N=0
Have had enough French	N=	1	21	0
Want to learn more English	N=	2	18	0
French is too hard	N=	1	17	0
Entering another programme	N=	0	4	0

F) Parental attitudes and motivation

Tables 18 and 19 indicate that parents feel their children rarely encounter situations in which they use French(1). The parents' perception of the use of French by their child corroborates the students' perception on these items. Generally, students hardly ever watch French television, listen to French radio or read French non-classroom material. They sometimes have opportunities to speak French or read French-language books other than textbooks.

TABLE 18

PARENTS' PERCEPTION OF THEIR CHILD'S PARTICIPATION IN ACTIVITIES, BY GROUP - GRADE 6

Activity \ Group	ETIS N=104	ETDT N=19	ITIS N=12	EPIS N=11	ITDT N=49
Watch French-language programmes	2.43	2.11	2.25	2.18	2.20
Listen to French radio station	1.62	1.42	1.25	1.27	1.37
Read French newspapers and magazines outside the classroom	2.30	1.79	1.92	2.00	1.92
Have opportunity to speak French	2.84	2.37	2.75	2.73	2.18
Read French-language books other than textbooks	2.91	2.37	3.00	1.82	2.61

5) Most of the time - 4) Often - 3) Sometimes
2) Hardly ever - 1) Never

1. See questionnaire in Appendix 3.

TABLE 19

PARENTS' PERCEPTION OF THEIR CHILD'S PARTICIPATION IN ACTIVITIES, BY GROUP - GRADE 9

Activity \ Group	TPDT N=16	LPDT N=54	LTDT N=19
Watch French-language programmes	2.06	1.94	2.17
Listen to French radio station	1.50	1.42	1.84
Read French newspapers and magazines outside the classroom	2.06	1.53	2.42
Have opportunity to speak French	3.00	2.24	2.58
Read French-language books other than textbooks	2.44	1.93	2.50

5) Most of the time - 4) Often - 3) Sometimes
2) Hardly ever - 1) Never

Table 20 indicates that parents are very satisfied or moderately satisfied with the immersion programme in which their child is enrolled.

More than 95% of the parents who have children enrolled in French immersion programmes at the grade 6 level want their children to remain in the programme (Table 21). One-fifth to one-third of the parents want their child to continue in the French immersion programme to the end of grade 9 while between 66% and 80% want their child to continue to the end of high school and be able to pursue studies at the post-secondary level.

TABLE 20

PARENTS' SATISFACTION WITH CHILD'S FRENCH IMMERSION PROGRAMME, BY GRADE AND GROUP

Grade \ Group	ETIS	ETDT	ITIS	EPIS	ITDT
Grade 6	4.59 N=104	4.47 N=19	4.17 N=12	4.27 N=11	4.33 N=49
Grade 9	4.00 N=16	3.93 N=54	4.89 N=19	-	-

5) Very satisfied
4) Moderately satisfied
3) Neither satisfied nor dissatisfied
2) Moderately dissatisfied
1) Very dissatisfied

TABLE 21

PARENTS' DECISION TO ENROLL THEIR CHILD IN FRENCH IMMERSION AND LEVEL ANTICIPATED, BY GROUP - GRADE 6

Decision \ Group	ETIS N=104	ETDT N=19	ITIS N=12	EPIS N=11	ITDT N=47
	%	%	%	%	%
Yes	97.1	94.7	100.0	100.0	95.7
No	2.9	5.3	0.0	0.0	4.3

If yes, level \ Group	1 N=100	2 N=18	3 N=12	4 N=11	5 N=45
	%	%	%	%	%
End of grade 9	25.0	22.2	33.3	27.3	21.7
End of grade 12	36.0	55.6	50.0	72.7	47.8
University	39.0	22.2	16.7	0.0	30.4

Table 22 presents the parents' decision to enroll their child in French immersion beyond grade 9. All parents in group LTDT want their child to continue in the programme to the end of high school. Of these parents, 60% would like their child to pursue university studies in French. Three-quarters of the parents in group TPDT want their child to continue in French immersion beyond grade 9. Of these, all expressed the desire that their child continue to the end of high school and one-third mentioned the possibility of university courses in French. Approximately half (56%) the parents in the late partial immersion programme (group LPDT) stated that they desired their child to continue in the French immersion programme. Of these, 44% indicated that they wished their child to pursue university courses in French. At the grade 9 level, there is a strong correlation between the student and parent responses on this question. In group LPDT, 54.1% of the students indicated that they did not want to continue (see Table 17).

TABLE 22

PARENTS' DECISION TO ENROLL THEIR CHILD IN FRENCH IMMERSION AND LEVEL ANTICIPATED, BY GROUP - GRADE 9

Decision \ Group	TPDT N=16	LPDT N=47	LTDT N=16
	%	%	%
Yes	75.0	55.3	100.0
No	25.0	44.7	0.0
If yes, level \ Group	**TPDT N=12**	**LPDT N=27**	**LTDT N=15**
	%	%	%
End of grade 12	66.7	55.6	40.0
University	33.3	44.4	60.0

G) Teachers' characteristics

Three groups of teachers were created according to the type of setting in which they were teaching. Teachers included in the analyses are not only those who teach in grades 6 and 9, but all teachers who teach immersion students in all school divisions. The objective of the following analyses is to study the differences in the three settings from a teacher's perspective. The setting termed "other" refers to a situation in which three programmes (immersion, Français and English) coexist under one administration or in which the immersion and Français programmes coexist.

Teachers were asked questions relating to their teaching experience and their language background, to programme information and the use of French in the school.

Table 23 indicates that teachers in the immersion and other settings have an average of ten years' teaching experience, whereas teachers in the dual track setting have eight.

TABLE 23

TEACHING EXPERIENCE, BY SETTING

Characteristic \ Setting	Immersion	Dual track	Other
Average number of years' experience	9.638	7.660	10.000
Standard deviation	6.568	6.405	5.612
Minimum	1	1	1
Maximum	31	31	23
Number of teachers	105	148	13

Teachers in the dual track setting have more experience than others teaching English in a regular English programme or teaching the Core French programme (Table 24). Furthermore, they have more experience at the junior high and high school levels. This is primarily due to the fact that more immersion programmes at the grades 7 to 12 level are in dual track settings.

Teachers in an immersion setting have more experience teaching English in French immersion, teaching French in French immersion and teaching French and English in the Français programme.

Teachers in the "other" setting have more experience in grades K to 6 than at other levels.

Table 25 indicates that one-third of the teachers in the immersion setting have taken their primary grades exclusively in English, whereas two-fifths of the teachers in the dual track and other settings have done so. At the secondary level, two-fifths of the teachers in the immersion setting have taken their schooling exclusively in English, whereas over half those in "other" settings have done so.

At the university level, half the teachers in the immersion and other settings followed their courses exclusively in French. Approximately one-third of the dual track teachers followed their university courses exclusively in French and 29% did so in both languages.

TABLE 24

AVERAGE NUMBER OF YEARS' TEACHING EXPERIENCE, BY PROGRAMME, SETTING AND LEVEL

Programme and setting \ Level		K-3		4-6		7-9		10-12	
Teaching in English in regular English programme	Immersion	4.4	N=25	3.9	N=21	3.4	N=14	2.7	N=7
	Dual track	3.9	N=33	4.3	N=30	3.4	N=21	5.9	N=9
	Other	4.6	N=5	2.3	N=3	4.0	N=2	5.0	N=1
Teaching in English in French immersion programme	Immersion	3.4	N=32	3.4	N=26	2.3	N=3	0.0	N=0
	Dual track	2.1	N=19	2.0	N=8	2.3	N=3	0.0	N=0
	Other	2.7	N=3	1.0	N=2	1.0	N=1	0.0	N=0
Teaching the core French programme	Immersion	4.9	N=16	3.5	N=17	3.1	N=14	2.9	N=8
	Dual track	2.8	N=35	3.3	N=42	3.9	N=34	4.3	N=18
	Other	3.5	N=2	1.0	N=1	1.3	N=3	0.0	N=0
Teaching French in French immersion programme	Immersion	3.7	N=61	3.3	N=45	2.8	N=5	0.0	N=0
	Dual track	2.1	N=89	2.0	N=26	2.7	N=23	2.1	N=7
	Other	2.2	N=10	1.3	N=3	0.0	N=0	2.0	N=1
Teaching English in Français programme	Immersion	2.9	N=16	6.9	N=8	3.6	N=5	1.0	N=1
	Dual track	3.1	N=8	2.0	N=3	3.0	N=3	3.6	N=5
	Other	3.0	N=4	6.0	N=3	1.0	N=1	0.0	N=0
Teaching French in Français programme	Immersion	2.9	N=24	3.6	N=18	3.4	N=9	4.0	N=4
	Dual track	3.5	N=26	2.8	N=15	2.2	N=9	3.3	N=9
	Other	5.2	N=6	7.0	N=3	1.0	N=1	3.0	N=2
Special role	Immersion	3.0	N=23	3.3	N=16	3.4	N=8	2.8	N=4
	Dual track	2.7	N=7	3.5	N=4	4.0	N=3	4.5	N=2
	Other	5.0	N=1	0.0	N=0	0.0	N=0	0.0	N=0

TABLE 25

IMMERSION TEACHERS' LANGUAGE MEDIUM OF INSTRUCTION AS STUDENTS, BY LEVEL AND SETTING

Level and setting / Language medium		French	English	French and English	Other
Primary	Immersion	N=44 (42%)	N=35 (34%)	N=24 (23%)	N=1 (1%)
	Dual track	N=59 (41%)	N=59 (41%)	N=23 (16%)	N=2 (1%)
	Other	N=6 (46%)	N=5 (39%)	N=2 (15%)	N=0 (0%)
Secondary	Immersion	N=37 (36%)	N=41 (40%)	N=24 (23%)	N=1 (1%)
	Dual track	N=45 (32%)	N=67 (47%)	N=29 (20%)	N=1 (1%)
	Other	N=4 (31%)	N=7 (54%)	N=2 (15%)	N=0 (0%)
University	Immersion	N=50 (51%)	N=29 (29%)	N=20 (20%)	N=0 (0%)
	Dual track	N=41 (30%)	N=52 (38%)	N=39 (29%)	N=4 (3%)
	Other	N=7 (54%)	N=2 (15%)	N=4 (31%)	N=0 (0%)
Teacher training	Immersion	N=42 (41%)	N=49 (48%)	N=11 (11%)	N=0 (0%)
	Dual track	N=49 (36%)	N=65 (47%)	N=24 (17%)	N=0 (0%)
	Other	N=2 (15%)	N=8 (62%)	N=3 (23%)	N=0 (0%)

Approximately two-fifths of the teachers in the immersion and dual track settings have taken their teacher training in French, whereas one-half did so in English. Two-thirds of the teachers in the "other" setting took their teacher training in English.

The analysis of the self-reported teacher training experience by programme, subject, setting and level is presented in Table 26. The "other" group has been eliminated from the analysis because of small numbers. Teachers reported the professional courses or parts of courses that they had taken to obtain their teaching certificate. This analysis is influenced by the greater number of teachers at the elementary level and by the proportion of grades 7 to 12 immersion programmes in a dual track setting.

TABLE 26

SELF-REPORTED TEACHER TRAINING, BY PROGRAMME, SUBJECT, SETTING AND LEVEL

Programme	Setting and level / Subject	Immersion		Dual track	
		Element.	Second.	Element.	Second.
		%	%	%	%
Regular English	English language arts	46.7	10.5	42.6	10.8
	French language arts	30.5	9.5	25.7	15.5
	Other subjects	36.2 N=38		36.5 N=54	
Français	English language arts	27.6	2.9	18.2	3.4
	French language arts	44.8	11.4	27.7	12.2
	Other subjects	4.8 N=5		6.8 N=10	
French immersion	English language arts	18.1	1.0	20.9	3.4
	French language arts	24.8	2.9	31.8	5.4
	Other subjects	8.6 N=9		10.8 N=16	
N =		105		148	

More than 50% of the teachers in either setting reported that they received training to teach English in the regular English programme, whereas 40% indicated they received training to teach French. Approximately one-third of the teachers indicated they received training to teach other subjects in the regular English programme. They did not indicate whether they received the training for other subjects at the elementary or secondary level.

For the Français programme, teachers in the dual track setting reported that they received less training to teach English than those in the immersion setting. In the dual track setting, 20% of the teachers reported receiving training to teach English language arts, whereas 30% of the teachers in the immersion setting did so. More than 50% of the teachers in the immersion setting reported having received training to teach French language arts in the Français programme, whereas 40% of the teachers in the dual track setting did so. Few teachers in either setting reported that they received training to teach other subjects in the Français programme.

Approximately one-fifth of the teachers in the immersion setting and one-quarter of the teachers in the dual track setting indicated they received training to teach English language arts in the French immersion programme. One-quarter of the teachers in the immersion setting and one-third in the dual track setting indicated that they received training to teach French language arts in the French immersion programme. Few teachers reported that they had received training to teach other subjects in the programme.

Since their teacher training, approximately one-fourth of the teachers reported that they had taken formal studies to teach French language

arts in the French immersion programme at the elementary level (Table 27). Few reported having taken formal studies to teach at the secondary level or to teach English or French language arts or other subjects at the elementary or secondary levels.

TABLE 27

SELF-REPORTED FORMAL STUDIES, BY PROGRAMME, SUBJECT, SETTING AND LEVEL

Programme	Setting and level / Subject	Immersion		Dual track	
		Element.	Second.	Element.	Second.
		%	%	%	%
Regular English	English language arts	10.5	0.0	14.9	0.0
	French language arts	10.5	0.0	9.5	1.4
	Other subjects	2.9 N=3		6.8 N=10	
Français	English language arts	1.9	0.0	6.8	0.0
	French language arts	12.4	6.7	8.8	6.8
	Other subjects	3.8 N=4		1.4 N=2	
French immersion	English language arts	6.7	0.0	9.5	0.0
	French language arts	24.8	0.0	29.7	3.4
	Other subjects	5.7 N=6		9.5 N=14	

Approximately one-third of the teachers in either setting reported they had taken part in professional development activities at the elementary level in English language arts for the English and immersion programmes (Table 28). Their professional development activities have been

concentrated in the immersion programme: approximately two-thirds have engaged in such activities for teaching French language arts at the elementary level. Between 15% and 35% of the teachers undertook professional development for the teaching of French language arts at the elementary level in the regular English and Français programmes.

TABLE 28

SELF-REPORTED PROFESSIONAL DEVELOPMENT, BY PROGRAMME, SUBJECT, SETTING AND LEVEL

Programme	Setting and level / Subject	Immersion		Dual track	
		Element.	Second.	Element.	Second.
		%	%	%	%
Regular English	English language arts	37.1	5.7	33.1	6.8
	French language arts	21.9	4.8	16.2	9.5
	Other subjects	5.7 N=6		8.8 N=13	
Français	English language arts	20.0	0.0	8.1	0.0
	French language arts	35.2	6.7	14.9	10.1
	Other subjects	3.8 N=4		2.0 N=3	
French immersion	English language arts	39.0	1.9	37.2	5.4
	French language arts	62.9	12.4	66.9	21.6
	Other subjects	16.2 N=17		28.4 N=42	

Table 29 presents the teachers' perception of the use of French in materials displayed or in school events by setting. Teachers in the immersion and "other" settings indicate that the greatest proportion of materials and activities is in French (76% to 99%). In the dual track setting, teachers perceive that French is more or less restricted to the classroom. French is used approximately 25% of the time in the school, either in materials displayed or in verbal communication.

Teachers perceive that students in the dual track and other settings use French less often in communicating with peers and teachers than do students in the immersion setting (Table 30).

TABLE 29

TEACHERS' PERCEPTION OF THE USE OF FRENCH
IN MATERIALS DISPLAYED OR IN SCHOOL EVENTS, BY SETTING

Materials and events \ Setting	Immersion	Dual track	Other
	%	%	%
Materials displayed in classroom	91.3	91.8	86.2
Materials displayed in school corridors	91.5	44.5	86.5
Materials displayed on parents' night in classroom	88.3	90.4	85.8
Materials displayed on parents' night in whole school	88.2	48.5	75.7
School assemblies	95.8	23.3	78.6
School activities (e.g. sports days)	94.4	26.8	85.8
P.A. announcements	98.8	21.2	81.9
Conversation in the staff room	93.5	36.8	82.3
Staff meetings	98.8	17.6	89.6

TABLE 30

TEACHERS' PERCEPTION OF THE USE OF THE FRENCH LANGUAGE BY STUDENTS, BY SETTING*

Situation \ Setting	Immersion	Dual track	Other
To the teacher during lessons taught in French	3.75	3.56	3.62
To the teacher otherwise in the classroom	3.51	3.43	3.38
To the teacher outside the classroom	3.45	3.22	3.38
To the teacher during lessons taught in French	3.70	3.18	3.30
To other pupils during lessons taught in French	3.72	2.91	2.77
To other pupils otherwise in the classroom	2.95	2.49	2.31
To their own classmates outside the classroom	2.26	1.86	2.08
To other pupils in the school	2.41	1.65	2.08
To other members of the school staff	3.54	2.42	3.08

* 1 = not at all - 2 = sometimes - 3 = often - 4 = always

Teachers were asked which type of setting they believed was the most effective in achieving the French immersion programme's goals (Table 31). Between 91% and 97% of the teachers in the three settings believe that the immersion setting would be the most effective in achieving these goals.

TABLE 31

TEACHERS' PERCEPTION OF THE MOST EFFECTIVE SETTING FOR ACHIEVING THE FRENCH IMMERSION PROGRAMME'S GOALS, BY SETTING

Setting perceived as most effective \ Setting	Immersion	Dual track	Other
	%	%	%
Dual track school	2.9	5.7	7.7
Immersion centre	97.1	90.8	92.3
Other	0.0	3.5	0.0
N=	104	141	13

H) Principals' characteristics

Principals were asked various questions dealing with their administrative experience, their language background, the school in which they were working and their perception of the French immersion programme.

Forty-one principals and vice-principals completed the questionnaire; eleven were in the immersion setting, twenty-six in the dual track setting and four in the "other" setting (immersion and Français programmes or all three programmes coexist).

Table 32 indicates that principals in the dual track setting have, on average, more than eight years of experience as principals, whereas those in the immersion setting have five and those in the "other" setting have three. Principals in the dual track setting have had most of their experience administering the English programme only. In the immersion setting, the largest number have administered either the English and Français programmes or the French immersion programme, whereas principals in the "other" setting have administered the Français programme or the Français and French immersion programmes.

TABLE 32

PRINCIPALS' ADMINISTRATIVE EXPERIENCE, BY TYPE OF SCHOOL AND SETTING

Type of school \ Setting	Immersion	Dual track	Other
English programme only	1.55 N=11	7.89 N=26	1.26 N=4
Français programme only	1.55 N=11	0.5 N=26	3.0 N=4
Both English and Français programmes	2.55 N=11	1.69 N=26	0.0 N=4
French immersion programme only	2.55 N=11	0.40 N=25	0.0 N=4
Both English and French immersion programmes	0.8 N=11	2.27 N=26	0.75 N=4
Both Français and French immersion programmes	0.36 N=11	0.39 N=26	2.75 N=4
Average administrative experience	5.09 N=11	8.58 N=26	3.0 N=4

Principals in the dual track setting believe that they can get by in French, that they speak English very well and that they seldom use French (Table 33). Principals in the immersion and "other" settings indicate that they speak French and English well and that they frequently use French at home, in their social and professional contacts and in contacts with students.

Table 34 indicates that most of the principals had English as their language of instruction during their education. More principals in the immersion and "other" settings had either French or French and English as their language of instruction.

TABLE 33

PRINCIPALS' PERCEPTION OF COMPETENCY AND USE OF ENGLISH AND FRENCH, BY SETTING

Language skills and use \ Setting	Immersion	Dual track	Other
Speak*			
French	4.3 N=10	3.0 N=24	4.8 N=4
English	4.9 N=11	5.0 N=25	5.0 N=4
Use of French**			
Home	4.0 N=11	2.1 N=24	4.3 N=4
Social	3.5 N=11	2.1 N=24	3.5 N=4
Professional contacts	3.6 N=11	2.5 N=24	4.0 N=4
Contacts with students	4.8 N=11	3.3 N=24	4.3 N=4

* 5 - very well, 4 - quite well, 3 - can get by, 2 - only a little, 1 - not at all

** 5 - always, 4 - frequently, 3 - occasionally, 2 - seldom, 1 - never

TABLE 34

LANGUAGE USED AS MEDIUM OF INSTRUCTION DURING PRINCIPALS' EDUCATION, BY SETTING AND LEVEL

Setting	Language \ Level	Primary N	Secondary N	University N	Teacher training N
Immersion	English	8	5	5	8
	French	1	1	3	0
	Both	2	4	2	1
Dual track	English	20	22	21	21
	French	3	3	0	0
	Both	2	0	4	1
Other	English	3	2	2	3
	French	1	1	0	0
	Both	0	1	2	1

The principals' perception of the use of French in the school generally corroborates the teachers' perception (Table 35). Principals in the immersion setting indicate that 91% to 100% use French, thus suggesting a French-language atmosphere in the school. Principals in the dual track setting perceive that French is more or less restricted to the classroom. Between 7% and 31% of the total use of language or of the materials displayed is French or in French. In the "other" setting,

TABLE 35

PRINCIPALS' PERCEPTION OF FRENCH USAGE IN THE SCHOOL, BY SETTING

Materials and events \ Setting	Immersion	Dual track	Other
	%	%	%
Materials displayed in classroom	91	94	83
Materials displayed in the corridors	91	31	75
Materials displayed for special occasions	91	29	73
School assemblies	96	15	77
School activities like sports days	92	7	82
P.A. announcements	100	16	62
Pupils' interactions with teachers other than their own	93	26	78
Pupils' interactions in the office	95	24	85
Conversation in the staff room	91	22	70
Teachers' meetings	93	8	65

principals suggest a French atmosphere but not one as extensive as that of the immersion setting. The use of French ranges from 62% to 85%. This is primarily due to the triple track situation (immersion, Français and English programmes in the same setting).

Principals were asked which administrative areas associated with the French immersion programme created more difficulty for them than would a non-immersion programme (Table 36). The areas most frequently identified are obtaining resource materials, hiring staff and finding substitute teachers. Principals in the immersion and dual track settings also feel that establishing basic programmes and bussing and other transportation also create problems for them.

Principals in the three settings believe that parents are generally satisfied with the French immersion programmes they administer.

Principals in the immersion setting are satisfied with their situation and believe that their setting is the most effective in achieving the French immersion programme goals. Five-sixths (83%) of the principals in the dual track setting feel that the present situation of the programme they administer is satisfactory; however, more than half of them (55%) believe that the immersion setting is the most effective in achieving programme goals. Half the principals in the "other" setting are not satisfied with the present conditions in which the immersion programme is offered in their school and all of them believe that the immersion setting is the most effective in achieving the

TABLE 36

PRINCIPALS' PERCEPTION OF ADMINISTRATIVE AREAS CREATING MORE DIFFICULTY IN THE IMMERSION PROGRAMME, BY SETTING

Area \ Setting	Immersion N=11	Dual track N=25	Other N=4
Scheduling and timetabling	3	8	3
Getting basic programmes established	6	14	0
Getting resource materials	7	20	2
Teacher evaluation	0	5	0
Hiring staff	4	15	1
Staff relations	0	5	2
Public relations	1	4	3
Parents' demands	3	10	3
Bussing and other transportation	7	11	0
Crowding in the school	3	3	0
Professional development of teachers	2	6	1
Finding substitute teachers	8	10	2
Absence of regular staff for meetings	1	1	0
Discipline problems	0	0	0
Pupil transfers	0	0	0
Staff transfers	0	1	1
Organizing remedial programmes	4	4	1
Nature of physical facilities	0	1	0

programme's goals. They believe that their present situation (triple track) is not conducive to attaining the goals of the three programmes.

V - SUMMARY AND CONCLUSIONS

The object of the present study is to compare achievement in English language skills and in mathematics within French immersion groups in grades 6 and 9 and in French language skills between the immersion groups and a sample of students enrolled in the Français programme. Different types of programmes (early, intermediate or late, total or partial) in different settings (immersion or dual track) are considered. Attitudes, motivation and characteristics of students, parents, teachers and principals are examined in relation to the types of programmes and settings.

The present summary is made across grades (and, where warranted, within a specific grade) for the achievement, linguistic and motivational results. The use of the covariates will be indicated when applicable.

A) English language achievement

The intelligence quotient and socio-economic status are the covariates used for within-group comparisons. At the grades 6 and 9 levels, no statistically significant differences were found between the French immersion groups. All groups obtained results which were average or close to average when compared to national norms (see Table 58). At the grade 6 level, exceptions occur in the early total immersion groups in the immersion and dual track settings (groups ETIS and ETDT) and the intermediate total immersion group (ITDT) in a dual track setting obtained results which were, statistically, significantly higher than

the national norm on the English Vocabulary subtest. The early total French immersion group in an immersion setting (group ETIS) also obtained results which were, statistically, significantly higher than the national norm. At the grade 9 level, the two late immersion groups (LPDT and LTDT) obtained higher results than the national norm and the differences are statistically significant (see Table 6A).

B) Mathematics achievement

The intelligence quotient and the socio-economic status are the covariates used for within-group comparisons. At the grade 6 level, no statistically significant difference was found within immersion groups on the Mathematics Problems subtest. The early total immersion group in the immersion setting (group ETIS) obtained statistically significant higher results on the Mathematics Concepts subtest than the early partial immersion group in an immersion setting. At the grade 9 level, no statistically significant difference was found within the French immersion groups.

When comparing the unadjusted average percentiles to the national norms at the grade 6 level, the early total immersion group in the immersion setting (ETIS) obtained statistically significant higher results on the Mathematics Problems and Mathematics Concepts subtests (see Table 5A). The intermediate total immersion group in a dual track setting (group ITDT) obtained statistically significant higher results than the national norm on the Mathematics Problems subtest. At the grade 9 level, the three French immersion groups obtained significantly higher results than the national norm on the Stanford Task Mathematics test (see Table 6A).

C) French language proficiency

French immersion groups were compared to a sample of students in Français schools whose mother tongue is French. Intelligence quotient and socio-economic status were the covariates used for comparisons within the French immersion groups.

At the grade 6 and 9 levels, the Français comparative groups generally obtained significantly higher results than the French immersion groups.

At the grade 6 level, the early total immersion groups in either setting (ETIS and ETDT) and the intermediate total immersion group in an immersion setting (group ITIS) obtained statistically significant higher results on the Cloze and Aural Comprehension tests than the early partial group (EPIS) and the intermediate total group in a dual track setting (group ITDT). The latter two did not obtain, statistically, significantly different results (see Tables 8A and 8B).

At the grade 9 level, the early total immersion group (TPDT) obtained statistically significant higher results on the Aural Comprehension test than the late partial group (LPDT) whereas the two late immersion groups did not differ significantly from each other. On the Cloze test, no statistically significant difference was found within the French immersion groups (see Tables 11A and 11B).

The Writing Skills test was administered to the total population of each group. In the larger groups, a random sample was corrected

whereas, in the smaller groups, the total population was included in the analysis. At the grade 6 level, the general pattern observed when significant differences are found can be summed up as follows: the early total immersion groups in either setting (groups ETIS and ETDT) and the intermediate total immersion group in an immersion setting (group ITIS) obtained higher results than the partial immersion group in an immersion setting and the intermediate total immersion group in a dual track setting (groups EPIS and ITDT, see Tables 9 and 9E). At the grade 9 level, the early total immersion group (TPDT) obtained the highest results, followed by the late total immersion group. The late partial group obtained lower results than groups TPDT and LTDT (see Tables 12 to 12E).

The Oral Production test was administered to a random sample of students in each group. When groups were too small to select a sample, the total population was tested. At the grade 6 level, groups ETIS, ETDT and ITIS obtained higher results than the partial immersion group or the intermediate total immersion group in a dual track setting (see Tables 10 to 10F). At the grade 9 level, the early immersion group generally obtained statistically significant higher results than the late immersion groups (LPDT and LTDT). Although the late total immersion group obtained higher results than the late partial group, statistically significant differences were not found (see Tables 13 to 13E).

D) Perceptions and attitudes

At both levels, students indicate that the use of French is mostly restricted to the classroom. Students in an immersion setting often

speak French in the school and on school grounds whereas students in the dual track setting rarely speak French in these situations.

Students who are in a total French immersion programme indicate more frequently that they want to continue in the programme than do students who have been in a total immersion programme but who are now enrolled in a partial immersion programme. At either level, students who have been in a partial immersion programme have a greater tendency to wish to discontinue. The major reasons given to continue in the French immersion programme are the anticipated better job opportunities and the enjoyment of learning or speaking French. Students who do not wish to continue feel that they have had enough French and that they want to learn more English.

Parents are generally very supportive of the French immersion programme. Parents of grade 6 students indicate they want their child to continue at least to the end of grade 9. Approximately 75% would like their child to continue to the end of grade 12. Parents of grade 9 students in total immersion programmes generally want their child to continue in the French immersion programme for at least the next three years. Half the parents in the late partial immersion programme want their child to continue. These data corroborate student wishes (see Tables 16, 17, 21 and 22).

Results on the teachers' and principals' questionnaires indicate that, in the immersion setting, the ambiance is French, whereas in the English setting, the use of French by staff and students is more or

less restricted to the classroom. Teachers and principals generally believe that the immersion setting would be the most effective in achieving the French immersion programme's goals.

Principals in either setting have identified some administrative areas they believe create more difficulty than a non-immersion programme. These are obtaining resource materials, establishing basic programmes and finding substitute teachers. Bussing and other transportation also create some problems. Principals in the dual track setting indicate more frequently than the others that hiring staff creates difficulties for them.

E) Conclusions

The results of this research are generally in agreement with those of the 1980-81 study in Manitoba and with the findings reported in Québec and Ontario.

Even though the numbers of students in different groups are unequal, and although some are small and not all types of programmes are offered in different settings, the general conclusion is that French immersion programmes have no negative effects on English language or mathematics achievement. French immersion groups obtain average to above-average results when compared to the national norm.

Although French immersion students have not attained the level of proficiency in French that is observed among Français students whose

mother tongue is French, the total immersion programme in an immersion setting produces the best results. Students in total immersion programmes are more motivated to continue in the programme. Intermediate and late total immersion programmes have produced positive results when compared to early total immersion programmes.

F) Educational implications

In this section, an attempt is made to identify the educational implications which arise from this study. These implications are drawn from the data provided by students, parents, teachers and principals. They are not presented in order of importance but as elements of the most favourable conditions for learning French as a second language for school-aged children.

1) The programme

The total French immersion programme provides the best overall type of programme for learning French without negative effects on English language or mathematics skills. Total intermediate and late French immersion programmes are viable alternatives for achieving programme goals.

In French language proficiency skills, written language is less sensitive to the entry point than oral language skills. Oral skills are better perfected by early total immersion students.

2) The setting

The school staff and test results indicate that the immersion setting is the most effective in achieving the French immersion programme's goals. The immersion setting is defined as a school or section of a school in which the ambiance is French. The administration, teachers, specialist and support staff speak French to students and amongst themselves. Students at the elementary level seem to be more sensitive to the setting.

3) Other implications

The 1980-81 study identified five other educational implications. In light of the expected rapid increase of enrolment in immersion programmes in Manitoba, the broad areas of concern were the French immersion programmes offered at the high school level, teacher training and professional development, and the availability of curriculum guides, textbooks and backup resources. Even though some progress has been made in these areas, the concerns expressed three years ago remain valid in three of these areas.

a) High school

The majority of parents and students would like the French immersion programme to be available to the end of high school (grade 12). If the programme is to be extended to this level, its success will depend on the number of options offered in grades 10 to 12.

The objective would be to offer, in a French immersion high school, all options normally available in a regular high school English programme. For this objective to be feasible, a sufficient number of students would have to be enrolled. If, at the present time, enrollments do not permit an individual school division to offer a high school programme, school divisions should examine procedures under which students from different school divisions would be regrouped or common resources provided and shared.

b) Teacher training and professional development

With the rapid increase of enrollments in French immersion programmes and the development of programmes and courses at the high school level, teacher training institutions must provide programmes, rather than isolated courses only, for the French immersion programme. If teachers are to fulfill the objective of increasing the students' awareness and appreciation of the French culture, teachers should receive relevant courses during their training.

c) Curriculum guides, textbooks and backup resources

A study of the availability and adequacy of curriculum guides and textbooks should be undertaken.

At the high school level, if instruction in French is extended to a larger number of courses, great care should be taken to select or develop adequate materials that will best meet the needs of the immersion clientele.

APPENDICES

APPENDIX

1. Student school experience

2. Scoring scales: written samples
   Scoring scales: oral samples

3. Student questionnaire
   Parent questionnaire
   Teacher questionnaire
   Principal questionnaire

4. Occupation in the calculation of socio-economic status

APPENDIX 1

APPENDIX 2

SCORING SCALES: WRITTEN SAMPLES

A) Spelling

5 - no errors
4 - a few errors
3 - many errors: comprehension is not affected
2 - many errors: comprehension is affected
1 - nearly all errors: incomprehensible
0 - sample too small to evaluate

B) Grammar and Syntax

5 - good grammar and syntax
4 - a few errors
3 - many errors: comprehension is not affected
2 - many errors: comprehension is affected
1 - many serious errors: nearly incomprehensible
0 - sample too small to evaluate

C) Vocabulary

5 - excellent vocabulary
4 - sufficient vocabulary: rarely a borrowing or English word
3 - limited but sufficient vocabulary: several borrowings and English words
2 - often the wrong word: many borrowings and English words
1 - insufficient vocabulary: production is affected
0 - sample too small to evaluate

D) Communication: conceptual level

5 - many ideas: text is structured and organized
4 - many ideas: text is uneven
3 - several ideas: repetitions and uneven text
2 - few ideas: uneven and disjointed text
1 - incomprehensible
0 - sample too small to evaluate

SCORING SCALES: ORAL SAMPLES

A) Comprehension during conversation
- 5 - understands everything
- 4 - very few repetitions needed for comprehension
- 3 - several questions have to be repeated
- 2 - several questions have to be translated
- 1 - nearly all questions have to be translated

B) Pronunciation and fluency
- 5 - native-like pronunciation and fluency
- 4 - a few mispronounced words not affecting meaning
- 3 - inconsistent pronunciation leading to confusions
- 2 - serious pronunciation errors affecting communication
- 1 - pronunciation difficulties prevent communication
- 0 - sample too small for evaluation

C) Grammar and Syntax
- 5 - native-like knowledge of grammar and syntax
- 4 - a few grammatical and syntactic errors
- 3 - numerous grammatical and syntactic errors leading to ambiguous speech
- 2 - grammar and syntax insufficient leading to some incomprehensible speech
- 1 - grammar and syntax so limited that understanding is greatly affected
- 0 - sample too small to evaluate

D) Vocabulary
- 5 - vocabulary equivalent to a native speaker of the age group
- 4 - a few errors: sufficient vocabulary, rarely a borrowing or use of English words
- 3 - basic vocabulary but sufficient: some use of borrowing and English words
- 2 - very often the wrong word: many borrowings and English words
- 1 - insufficient vocabulary for production
- 0 - sample too small to evaluate

E) Communication
- 5 - willingness to communicate in French
- 4 - reticent but will communicate in French
- 3 - very little desire to communicate in French
- 2 - no desire to communicate in French
- 1 - refuses to speak in French

APPENDIX 3

CERECO INC.

CENTRE DE RECHERCHE ET DE CONSULTATION
CENTRE FOR RESEARCH AND CONSULTATION

(204) 247-6750

575 ST MARY'S, WINNIPEG, MANITOBA R2M 3L6

Dear student:

Your answers to all questions will be treated in strictest confidence. Although we ask for your name on the cover page, we do so only because we must be able to associate your answers to this questionnaire with other information we will collect later. As soon as we receive your questionnaire, it will be numbered and then the first page will be removed.

For the result of the research to be meaningful, it is important that you be as accurate and as frank as possible in your answers. The usefulness of your questionnaire will be lessened to the extent that you do not answer each item.

We thank you for your cooperation and remind you that your answers are confidential.

The researchers

STUDENT QUESTIONNAIRE

GRADES 6 AND 9

SCHOOL DIVISION: _____

SCHOOL: _____

GRADE: _____

CLASS: _____

NAME OF STUDENT: _____

Please answer each of the following questions by putting a circle around the answer which describes what you do.

The scale is:

A) most of the time
B) often
C) sometimes
D) hardly ever
E) never

1. Do you watch French television?	A - B - C - D - E	[ ] 13
2. Do you listen to the French radio station?	A - B - C - D - E	[ ] 14
3. Do you speak French to your classmates in the classroom?	A - B - C - D - E	[ ] 15
4. Do you speak French to your classmates outside the classroom but in the school?	A - B - C - D - E	[ ] 16
5. Do you speak French to your classmates outside the school?	A - B - C - D - E	[ ] 17
6. Do you speak French to your French teacher in the classroom?	A - B - C - D - E	[ ] 18
7. Do you speak French to your French teacher outside the classroom but in the school?	A - B - C - D - E	[ ] 19
8. Do you read French newspapers and magazines outside the classroom?	A - B - C - D - E	[ ] 20
9. Do you speak French outside the school?	A - B - C - D - E	[ ] 21
10. Do you read French-language books other than the textbooks used in class?	A - B - C - D - E	[ ] 22

11. If you could choose, would you continue in the French immersion program next year?

YES ___/ NO ___/ DON'T KNOW ___/ [ ] 23

Why? _____ [ ][ ] 24-25

_____ [ ][ ] 26-27

_____

_____

_____

12. Do you participate in activities in which French is spoken besides those arranged by the school? (e.g. theatre, clubs, scouts, guides, sports, church, etc.)

YES ___/ NO ___/ [ ] 28

IF YES which ones _____ [ ][ ] 29-30

_____ [ ][ ] 31-32

_____

_____

_____

_____

THANK YOU FOR YOUR COOPERATION

CERECO INC., 1983

RESEARCH AND EVALUATION OF FRENCH IMMERSION PROGRAMS IN MANITOBA

PARENTS' QUESTIONNAIRE

1. NAME OF CHILD _____ [ ][ ] 1-2

SCHOOL CHILD IS ATTENDING _____ [ ][ ] 3-4

BIRTH DATE OF CHILD _____ ! _____ ! _____ [ ][ ][ ]
day month year [ ][ ][ ]
5 - 10

SEX OF CHILD M [ ] F [ ] [ ] 11

GRADE OF CHILD (6 or 9) 6 [ ] 9 [ ] [ ] 12

2. Languages spoken at home

	ENGLISH	FRENCH	OTHER (SPECIFY)	DOESN'T APPLY	
By child	[ ]	[ ]	_____	[ ]	[ ] 13
By mother	[ ]	[ ]	_____	[ ]	[ ] 14
By father	[ ]	[ ]	_____	[ ]	[ ] 15
By brothers and sisters	[ ]	[ ]	_____	[ ]	[ ] 16

3. Father's ability to speak French

a) speaks fluently [ ] [ ] 17

b) can carry on a conversation [ ]

c) can understand but not speak it [ ]

d) doesn't know any French [ ]

4. Mother's ability to speak French

a) speaks fluently [ ] [ ] 18

b) can carry on a conversation [ ]

c) can understand but not speak it [ ]

d) doesn't know any French [ ]

5. Father's highest level of education

a)	some high school or less	[ ]
b)	completed high school	[ ]
c)	community college/technical school	[ ]
d)	some university	[ ]
e)	bachelor's degree (e.g., B.A., B.Sc., etc.)	[ ]
f)	post-graduate degree (e.g., M.A., Ph. D. doctor, dentist, etc.)	[ ]
g)	other (specify) _____ (e.g. nurse's training at hospital, private business school, etc.)	[ ]

[ ] 19

6. Mother's highest level of education

a)	some high school or less	[ ]
b)	completed high school	[ ]
c)	community college/technical school	[ ]
d)	some university	[ ]
e)	bachelor's degree (e.g., B.A., B.Sc., etc.)	[ ]
f)	post-graduate degree (e.g., M.A., Ph. D. doctor, dentist, etc.)	[ ]
g)	other (specify) _____ (e.g. nurse's training at hospital, private business school, etc.)	[ ]

[ ] 20

7. Total family income before taxes and other deductions

$ 9,999 or less	[ ]
10,000 to 19,999	[ ]
20,000 to 29,999	[ ]
30,000 to 39,999	[ ]
40,000 or more	[ ]

[ ] 21

8. Father's occupation (specify) _____ [ ][ ] 22-23
(if possible please use at least two words)

9. Mother's occupation (specify) _____ [ ][ ] 24-25
(if possible please use at least two words)

10. Are you satisfied with the French immersion program in which your child is enrolled?

a) very satisfied [ ] [ ] 26

b) moderately satisfied [ ]

c) neither satisfied, nor dissatisfied [ ]

d) moderately dissatisfied [ ]

e) very dissatisfied [ ]

11. Would you please comment on any aspect of the French immersion program in which your child is enrolled.

_____ [ ][ ][ ][ ] 27 - 30

_____

_____

12. Do you want your child to continue in French immersion?

YES [ ] NO [ ] [ ] 31

13. If yes, for how long do you want your child to continue?

a) to the end of junior high (grade 9) [ ]

b) to the end of high school (grade 12) [ ] [ ] 32

c) to have the possibility of pursuing post secondary studies in French [ ]

14. Does your child watch television program in the French language...

a)	most of the time	[ ]
b)	often	[ ]
c)	sometimes	[ ]
d)	hardly ever	[ ]
e)	never	[ ]

[ ] 33

15. Does your child listen to the French radio station...

a)	most of the time	[ ]
b)	often	[ ]
c)	sometimes	[ ]
d)	hardly ever	[ ]
e)	never	[ ]

[ ] 34

16. Does your child read French newspapers and magazines outside the classroom...

a)	most of the time	[ ]
b)	often	[ ]
c)	sometimes	[ ]
d)	hardly ever	[ ]
e)	never	[ ]

[ ] 35

17. Does your child have the opportunity to speak French outside the school...

a)	most of the time	[ ]
b)	often	[ ]
c)	sometimes	[ ]
d)	hardly ever	[ ]
e)	never	[ ]

[ ] 36

18. Does your child read French language books other than textbooks used in the class...

a)	most of the time	[ ]
b)	often	[ ]
c)	sometimes	[ ]
d)	hardly ever	[ ]
e)	never	[ ]

[ ] 37

19. Has your child participated in any activities in French not sponsored by the school during the last three years (e.g. visit to French-speaking area, summer camp in French, student exchange, theatre, etc.)

NO [ ] [ ] 38

YES [ ] Please specify the kind of experience, its duration and how you would evaluate the activities.

_____

_____

_____ [ ][ ][ ]
[ ][ ][ ]
39 - 44

_____

_____

_____

20. Have you any additional comments concerning your child studying French or the French immersion program?

_____

_____

_____ [ ][ ][ ][ ]
45 - 48

_____

_____

_____

THANK YOU FOR YOUR COOPERATION

CERECO INC. 1983

TEACHER QUESTIONNAIRE
A) TEACHING EXPERIENCE

School Division _____

1A. What is your total teaching experience? _____ in years

[ ][ ][ ][ ]

[ ][ ][ ][ ]
5 - 8

1B. What teaching experience do you have? Please write the number of years in the appropriate box(es). Include the present year (1982-83). For this question, the categories are not mutually exclusive and may add up to more than the total number of years of experience.

[ ][ ]
9 - 10

	K-3	4-6	7-9	9-12	
Teaching in English in regular English programs					[ ][ ][ ][ ] 11 - 14
Teaching in English in French immersion programs					[ ][ ][ ][ ] 15 - 18
Teaching Core or Conversational French Prog.					[ ][ ][ ][ ] 19 - 22
Teaching in French in French immersion programs					[ ][ ][ ][ ] 23 - 26
Teaching English in Français programs					[ ][ ][ ][ ] 27 - 30
Teaching in French in Français programs					[ ][ ][ ][ ] 31 - 34
Special role (e.g., librarian): _____					[ ][ ][ ][ ] 35 - 38

2A. Describe your teaching assignment this year. Indicate the subjects taught, the grade levels and the number of students per class.

	Subject	Grade	N° of Students per class	
Class I			[ ]	[ ][ ][ ][ ] 39 - 42
Class II			[ ]	[ ][ ][ ][ ] 43 - 46
Class III			[ ]	[ ][ ][ ][ ] 47 - 50
Class IV			[ ]	[ ][ ][ ][ ] 51 - 54
Class V			[ ]	[ ][ ][ ][ ] 55 - 58
Class VI			[ ]	[ ][ ][ ][ ] 59 - 62
Class VII			[ ]	[ ][ ][ ][ ] 63 - 66
Class VIII			[ ]	1 [ ][ ][ ][ ] 67 - 70

2B. What percentage of your time is spent teaching immersion students in the French language? _____ % [ ] 71

3. In your teacher training, did you take courses in the following areas and, if so, at what level?

		YES	NO	ELEMENTARY	SECONDARY	
For regular English program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 72
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 73
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 74
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 75
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 76
For Français program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 77
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 78
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 79
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 80
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 9
For French immersion program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 10
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 11
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 12
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 13
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 14

4. A) Since your teacher training, have you taken formal studies in the following areas, and if so at what level?

		YES	NO	ELEMENTARY	SECONDARY	
For regular English program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 15
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 16
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 17
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 18
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 19
For Français program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 20
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 21
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 22
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 23
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 24
For French immersion program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 25
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 26
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 27
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 28
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 29

4. B) Since your teacher training, have you taken professional development programs (workshops, conferences, in-services, etc.) in the following areas and if so at what level?

		YES	NO	ELEMENTARY	SECONDARY	
For regular English program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 30
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 31
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 32
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 33
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 34
For Français program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 35
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 36
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 37
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 38
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 39
For French immersion program	English language arts	[ ]	[ ]	[ ]	[ ]	[ ] 40
	French language arts	[ ]	[ ]	[ ]	[ ]	[ ] 41
	Other _____	[ ]	[ ]	[ ]	[ ]	[ ] 42
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 43
	_____	[ ]	[ ]	[ ]	[ ]	[ ] 44

B) LANGUAGE BACKGROUND

5. What language was the usual medium of instruction during your education?

PRIMARY	_____	[ ] 45
SECONDARY	_____	[ ] 46
UNIVERSITY (other than teacher training)	_____	[ ] 47
TEACHER TRAINING	_____	[ ] 48

6. How well can you speak

	ENGLISH	FRENCH	
Very well	[ ]	[ ]	[ ] 49
Quite well	[ ]	[ ]	[ ] 50
Can get by	[ ]	[ ]	
Only a little	[ ]	[ ]	
Not at all	[ ]	[ ]	

7. To what extent do you use French in your

	HOME	SOCIAL CONTACTS	PROFESSIONAL CONTACTS	
Always	[ ]	[ ]	[ ]	[ ] 51
Frequently	[ ]	[ ]	[ ]	[ ] 52
Occasionally	[ ]	[ ]	[ ]	[ ] 53
Seldom	[ ]	[ ]	[ ]	
Never	[ ]	[ ]	[ ]	

C) PROGRAM INFORMATION

8. In which type of school do you teach?

- School with the French immersion program only [ ] [ ] 54
- School with both English and Immersion programs [ ]
- School with both Français and Immersion programs [ ]

9. How much of the material displayed (posters, pupils' work, etc.) is French or French-oriented?

in your classroom	___%	[ ][ ] 55-56
in the school corridors	___%	[ ][ ] 57-58
on parents' night in your class	___%	[ ][ ] 59-60
on parents' night or other such occasions in the whole school	___%	[ ][ ] 61-62

10. How much of the following is conducted in French?

school assemblies	___%	[ ][ ] 63-64
school activities (e.g. sports days, concerts, etc.)	___%	[ ][ ] 65-66
P.A. announcements	___%	[ ][ ] 67-68
conversation in the staff room(s)	___%	[ ][ ] 69-70
staff meetings	___%	[ ][ ] 71-72
other:_____	___%	[ ][ ][ ] 73-75

Please comment_____ [ ][ ]

_____

11A. Do your pupils speak French to

	not at all	some-times	of-ten	al-ways	don't know	
you in lessons taught in French	[ ]	[ ]	[ ]	[ ]	NA	[ ] 78
you otherwise in the classroom	[ ]	[ ]	[ ]	[ ]	NA	[ ] 79
you outside the classroom	[ ]	[ ]	[ ]	[ ]	NA	[ ] 80
other teachers during lessons taught in French	[ ]	[ ]	[ ]	[ ]	[ ]	[ ] 9
other pupils during lessons taught in French	[ ]	[ ]	[ ]	[ ]	[ ]	[ ] 10
other pupils otherwise in the classroom	[ ]	[ ]	[ ]	[ ]	[ ]	[ ] 11
their own classmates outside the classroom	[ ]	[ ]	[ ]	[ ]	[ ]	[ ] 12
other pupils in the school	[ ]	[ ]	[ ]	[ ]	[ ]	[ ] 13
other members of the school staff	[ ]	[ ]	[ ]	[ ]	[ ]	[ ] 14

11B. Do you think your pupils ought to use more French in the school? YES [ ] NO [ ] [ ] 15

12. Do you think parents are generally satisfied with the immersion program?

YES [ ] NO [ ] [ ] 16

Please comment _____ [ ][ ] 17-18

_____

13. Which type of setting do you believe is the most effective in achieving the French immersion program goals?

[ ] a dual track school (a school where both the regular English program and the French immersion program coexist in the same building)

[ ] an immersion centre (a school building where the French immersion program is administered in French) [ ] 19

[ ] other (please specify) _____

_____

_____

14. If there are any other comments you wish to make on French immersion programs, please use the space below to do so.

_____

_____

_____ [ ][ ][ ][ ] 20 - 23

THANK YOU FOR YOUR COOPERATION

[ ][ ] 1-2
[ ][ ] 3-4

PRINCIPAL'S QUESTIONNAIRE

School Division _____

1. How many years of administrative experience have you had in schools with:

	YEARS	
An English program only	_____	[ ][ ] 5-6
A Français program only	_____	[ ][ ] 7-8
Both English and Français programs	_____	[ ][ ] 9-10
A French Immersion program only	_____	[ ][ ] 11-12
Both English and French immersion programs	_____	[ ][ ] 13-14
Both Français and French immersion programs	_____	[ ][ ] 15-16
Total administrative experience	_____	[ ][ ] 17-18

2. What language was the usual medium of instruction during your education?

PRIMARY	_____	[ ] 19
SECONDARY	_____	[ ] 20
UNIVERSITY	_____	[ ] 21
(Other than teacher training)		
TEACHER TRAINING	_____	[ ] 22

3. How well can you speak

	ENGLISH	FRENCH	
Very well	[ ]	[ ]	[ ][ ] 23-24
Quite well	[ ]	[ ]	
Can get by	[ ]	[ ]	
Only a little	[ ]	[ ]	
Not at all	[ ]	[ ]	

4. To what extent do you use French in your

	HOME	SOCIAL CONTACTS	PROFESSIONAL CONTACTS	CONTACTS WITH FRENCH IMMERSION STUDENTS	
Always	[ ]	[ ]	[ ]	[ ]	[ ][ ] 25-26
Frequently	[ ]	[ ]	[ ]	[ ]	[ ][ ] 27-28
Occasionally	[ ]	[ ]	[ ]	[ ]	
Seldom	[ ]	[ ]	[ ]	[ ]	
Never	[ ]	[ ]	[ ]	[ ]	

5. Are French immersion classes:

a) the only classes in the school [ ] [ ] 29
b) all located in one section of the school [ ]
c) distributed with other regular program classes [ ]

Please comment on any special arrangements _____ [ ][ ] 30-31

_____

Do you think that the arrangements that now exist are satisfactory?

YES [ ] NO [ ] [ ] 32

Please comment _____ [ ][ ] 33-34

_____

6. What type of French immersion program do you administer?

[ ] early total French immersion program [ ] 35
[ ] early partial French immersion program
[ ] late total French immersion program
[ ] late partial French immersion program

7. What percentage of the material displayed (posters, pupils' work, etc.) in the school is French or French-oreinted?

in immersion classrooms _____% [ ][ ] 36-37
in the corridors _____% [ ][ ] 38-39
for special occasions (e.g. parents' night) _____% [ ][ ] 40-41

8A. How much of the following is conducted in French:

school assemblies _____% [ ][ ] 42-43
school activities like sports days _____% [ ][ ] 44-45
P.A. announcements _____% [ ][ ] 46-47
pupils' interactions with teachers other than their own _____% [ ][ ] 48-49
pupils' interactions in the office _____% [ ][ ] 50-51
conversation in the staffroom _____% [ ][ ] 52-53
teachers' meetings _____% [ ][ ] 54-55

8B. These percentages are:

too great [ ] satisfactory [ ] not enough [ ] [ ] 56

Please comment _____ [ ][ ] 57-58

_____

9. Which type of school do you believe is the most effective in achieving the French immersion program goals?

[ ] a dual track school (a school where both the regular English program and the French immersion program coexist in the same building) [ ] 59

[ ] an immersion centre (a school where the French immersion program is administered in French)

[ ] other (please specify) _____

10. Do you think parents are generally satisfied with the French Immersion program in your school? [ ] 60

YES [ ] NO [ ]

Please comment _____

_____ [ ][ ] 61-62

11. Do any of the following administrative areas associated with the French immersion program create more difficulty for you than would be the case for a non-immersion program? (Please check as many as are applicable.)

[ ] Scheduling and timetabling [ ][ ] 63-64
[ ] Getting basic programs (curricula) established
[ ] Getting resource materials [ ][ ] 65-66
[ ] Teacher evaluation
[ ] Hiring staff [ ][ ] 67-68
[ ] Staff relations
[ ] Public relations (e.g. visitors, publicity) [ ][ ] 69-70
[ ] Parents' demands
[ ] Bussing and other transportation [ ][ ] 71-72
[ ] Crowding in the school
[ ] Professional development of teachers [ ][ ] 73-74
[ ] Finding substitute teachers
[ ] Absence of regular staff (for meetings, extracurricular activities)
[ ] Discipline problems
[ ] Pupil transfers
[ ] Staff transfers
[ ] Organizing remedial programs
[ ] Nature of physical facilities
[ ] Other _____

12. If there are any other comments you wish to make on French immersion programs, please use the space below to do so.

_____ [ ][ ][ ][ ] 75 - 78

_____

THANK YOU FOR YOUR COOPERATION

APPENDIX 4

OCCUPATION IN THE CALCULATION OF SOCIO-ECONOMIC STATUS

All answers to the questions were classified using Statistics Canada's categories:

1) Administrator
2) Liberal profession and technicians
3) Office worker
4) Recreational activities and services personnel and transportation and communication personnel
5) Farmer and agriculturally related jobs
6) Lumberjack and forestry personnel, fisherman, hunter and trapper, miner, quarryman and those with similar occupations
7) Production worker and those with similar occupations
8) Salesperson
11) Laborer

To these we have added:

0) Does not apply (father/mother deceased or couple separated)
9) No answer
10) Housewife
12) Retired
13) Unemployed
14) Student
15) Others (not specified)
16) Undecided
17) Self-employed
18) Athlete
19) Artist

We then tried to define each of these categories using as reference two socio-economic indices; those of Porter and Pineo and those of Blischen(1). The first, that of Porter and Pineo, is a subjective index calculated with a Canadian population sample on the "social position" of 204 Canadian occupations. The second, elaborated by Blischen on the 1951 census and revised with the statistics of 1961, is an unbiased stratification of occupations based on the employee's education and revenue. It is more unbiased for the simple reason that prestige does not come into play. It must be noted however that, even in an unbiased stratification, revenue will reflect, up to a certain point, the occupation's prestige. On the other hand, note that prestige can be attributed to the revenue of the occupation. Therefore the first index (we could call it an index of social status) and the second (an index of economic status) measure very nearly the same thing. In fact, the correlation between the indices of Porter - Pineo and Blischen, for 88 comparable occupations, is .912 (2), a very strong correlation. Using the index of Pineo and Porter (3) as a guide, we assigned values to the Statistics Canada classifications which we had used in our coding (i.e., the occupations with codes 1 to 8 inclusive and 11). This had already been done by Pineo and Porter and can be found in Table A - 1A. However, we did have to recalculate the values for the occupations carrying codes 4 and 6. The occupations of code 4 had been divided in two by Porter and Pineo, that is:

- recreational activities and service workers
- those employed in transportation and communication

Similarly, the 6th category had been divided in three:

- lumberjack and forestry personnel
- fisherman, hunter and trapper
- miner, quarryman and those with similar occupations

---

(1) The two methods of calculating the socio-economic index are presented in The Canadian Review of Sociology and Anthropology, Vol. 4, N° 1, Feb. 1967.

(2) Bernard R. Blischen, A Socio-Economic Index for Occupation in Canada, in The Canadian Review of Sociology and Anthropology, Vol. 4, N° 1, Feb. 1967, p. 50.

(3) Peter C. Pineo and John Porter, Occupational Prestige in Canada, in The Canadian Review of Sociology and Anthropology, Feb. 1967, p. 34.

These scores were subsequently transformed in the range of 1 to 10, with the highest score having the lowest ranking.

Using the same method, we arranged the other answers to the occupation question which were not included in the Statistics Canada categories. Codes 9 (no answer), 12 (retired), 15 (other, not specified) and 16 (undecided) have as rank the average of all occupations. We arranged the occupations with codes 0 (not applicable), 10 (housewife), 13 (unemployed), 14 (student), 17 (self employed), 18 (athlete) and 19 (artist). First, for the category of code 0, where the parents were deceased or the couple had separated, we assigned a score equal (according to the Porter - Pineo index) to one who lives on welfare, that is 7.3 or the 9th rank, instead of giving a score of 0 and 10th rank. The reasoning is as follows: if one of the parents is deceased, the surviving parent receives some sort of compensation, a form of social assistance. In the case of a separation, it is generally the female who keeps the children and she receives a form of social assistance. Therefore, in these cases, the economic level of the family (combined parents' occupations) will be calculated based on the surviving parent's occupation and the economic status of a person on social assistance.

For housewives, the task was much more difficult. The Pineo - Porter and Blischen indices do not take this occupation into account. Blischen's rationale is as follows: "Only occupations characteristic of males in the labour force were included, on the assumption that the family's social status is dependent upon the occupation of the husband rather than the wife when both are working."(4)

On the other hand, studies have indicated that the economic value of a housewife's work is approximately $18,000. It is also highly probable that an evaluation of prestige as undertaken by Porter and Pineo would have given a relatively high score for this occupation, but for a different reason, that is, the affective factor which it involves.

If we calculated the domestic work of a man who does not receive a salary for his work, we would arrive at an even higher income. For example, a competent laborer who earns, say $12,000 a year, and who does all repairs to his home, that is the work of a carpenter, plumber, electrician, etc., would have a yearly net salary of around $16,000. However, this type of domestic work could also be done by a doctor or a judge. There is no way of knowing.

---

(4) Bernard R. Blischen, op. cit., p. 42.

Therefore, we had to find the "real" value of a housewife. To do this, we posed this question: what would happen if there was no housewife? The answer was: the father of the family, as his means would allow, would hire someone to take care of the children and to do the housework.

Generally, these employees are paid salaries which are very close to the minimum wage of a labourer. For this reason, we decided to place the housewives at the same level as the labourer, that is the 7th rank.

The unemployed category (code 13) received the same score as those who live on welfare, in the opinion of Porter and Pineo, that is 7.3 or a 9th rank. Since the questionnaires were administered in mid-May, it is very likely that the unemployed in question are chronically unemployed or welfare recipients, given that the latter were thus classified for our means.

Students were calculated directly from the figures given by Pineo and Porter. We judge that a mother or father returning to school does not do so to prepare for employment as a lumberjack (code 6), farmer (code 5) or a laborer (code 11). Therefore we have calculated a score equivalent to the average of probable occupations, that is, administrators (code 1), liberal professionals and technicians (code 2), office workers (code 3), service personnel (code 4), skilled workers (code 7) or salesperson (code 8). The score came out to 45.85 which ranks 4th.

Porter and Pineo make no distinction between administrators and the self-employed (code 17). For this reason, we have isolated the occupations of the self-employed and recalculated their score, based on each individual occupation (45.81 which places 4th).

If we observe the frequency of adults in the occupations of codes 18 (athlete) and 19 (artist), we realize that it is negligible. These careers have, in recent years, experienced a rise in both prestige and salary. For the artists, the prestige has increased and for athletes the salaries have improved. Since these occupations were non-existent in Pineo and Porter's work, we used Blischen's scores. Hence the athletes have a score of 51.11 and occupy the 3rd rank, whereas artists occupy the same rank with a score of 52.04.

It is by these means that we have arrived at the rank in the right column of Table A - 1A. These ranks were used in the calculation of the parents' socio-economic status.

TABLE A - 1 A

RANK OF OCCUPATIONS FOR SOCIO-ECONOMIC STATUS

Code	Occupational categories	Weights Porter-Pineo	Blischen Rank
0)	Does not apply (father/mother deceased or couple separated)	-	9*
1)	Administrator	60.38	1
2)	Liberal profession and technicians	64.11	1
3)	Office worker	37.46	5
4)	Recreational activities and services personnel and transportation and communication personnel	(39.09)*	4
5)	Farmer and agriculturally related jobs	34.98	5
6)	Lumberjack and forestry personnel, fisherman, hunter and trapper, miner, quarryman and those with similar occupations	(29.61)*	6
7)	Production worker and those with similar occupations	36.55	5
8)	Salesperson	36.99	5
9)	No answer	-	Average
10)	Housewife	-	7*
11)	Laborer	21.47	7
12)	Retired	-	Average
13)	Unemployed	7.3*	9
14)	Student	(45.85)*	4
15)	Others (not specified)	-	Average
16)	Undecided	-	Average
17)	Self-employed	(45.81)*	4
18)	Athlete	(51.11)*	3
19)	Artist	(52.04)*	3

* our rank, our weight